INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

SCREENING SITE INSPECTION REPORT

FOR

DUGGER ELECTRIC AND EQUIPMENT CO.

DUGGER, INDIANA

U.S. EPA ID: IND984894808

Sullivan County

SEPTEMBER 9, 1991

6455
WSC

Signature Page
for
Dugger Electric and Equipment Co.
Dugger, Indiana

U.S.EPA ID: IND984894808

Prepared by: Mark L. Jaworski Date: 9/12/91
Mark L. Jaworski, Project Leader
Site Investigation Section
Indiana Department of Environmental Management

Reviewed by: Richard L. Molini Date: 13 Sept 91
Richard L. Molini, Working Leader
Site Investigation Section
Indiana Department of Environmental Management

Approved by: Harry E. Atkinson Date: October 16, 1991
Harry E. Atkinson, Chief
Site Investigation Section
Indiana Department of Environmental Management

Approved by: _____ Date: _____
EPA Project Manager
Colleen Hart

TABLE OF CONTENTS

APPENDICES

LIST OF ILLUSTRATIONS

LIST OF TABLES

SECTION I

INTRODUCTION

The Site Investigation Section of the Indiana Department of Environmental Management (IDEM) was given approval by the United States Environmental Protection Agency (U.S. EPA) to conduct a Screening Site Inspection (SSI) of the Dugger Electric site, located in Dugger, Indiana, Sullivan County.

The site is a transformer refurbishing facility. More than 600 transformers are present on the gravel lot of the property.

A Preliminary Assessment (PA) was completed by IDEM in February 1991. The site received a high priority because PCB contaminated water was found to be flowing from a storm ditch underneath the site property to an open ditch off site. In addition, PCB contaminated oil was also discovered within an on-site cased well which may promote PCB groundwater contamination. This SSI will address potential PCB contamination to off-site environments through groundwater, surface water, soil, and air pathways.

The SSI was conducted by IDEM personnel on July 24 and 25, 1991. The SSI included the collection of soil, sediment, groundwater samples, and surface water samples.

Information contained within this report will be used to evaluate the site under the Revised Hazard Ranking System Model for possible inclusion on the National Priorities List (NPL) of hazardous waste sites.

The purposes of an SSI have been stated by the State of Indiana in a directive outlining Pre-Remedial strategies. The directive states that all sites selected to receive a screening SI are chosen to 1) collect additional data beyond the PA to assist in the development of an HRS (Hazard Ranking System) score, 2) establish priorities among sites most likely to qualify for

the NPL (National Priorities List), and 3) identify the most critical data requirements for the expanded SI step. A screening SI will not have rigorous data quality objectives (DQOs). Based on the HRS score and other technical judgement factors, the site will then either be designated as NFRAP, (no further remedial action planned), or carried forward as an NPL listing candidate. An expanded SI will not automatically be done on these sites, however. First, they will go through a management evaluation to determine whether they can be addressed by another authority such as RCRA (Resource Conservation and Recovery Act).... Sites that are designated NFRAP, or deferred to other statutes are not candidates for an expanded SI.

The expanded SI will address all the data requirement of the revised HRS using field screening and NPL level DQOs. It may also provide needed data in a format to support remedial investigation work plan development. Only sites that appear to score high enough for listing and that have not been deferred to another authority will receive an expanded SI (U.S. EPA 1988).

SECTION II

SITE BACKGROUND

2.1 Introduction

This section includes information obtained from the Preliminary Assessment (PA), the SSI work plan, site representative interviews, IDEM files, and the potential hazardous waste site SI report (EPA Form 2070-13).

2.2 Site Description

The site is located on Main Street within the city of Dugger, Indiana. The area covered by this site is approximately one acre located in Township 7 N, Range 8 W, section 1 (southwest quarter of the southwest quarter, of the southwest quarter). The site is shown on the Dugger Quadrangle, U.S.G.S. Topographic Map. The site lies in the center of Dugger Indiana. Dugger Electric is bounded to the north by an open field and the Indiana Railroad, to the east by the Indiana Railroad, to the south by Main Street and to the west by First Street.

Dugger Electric is comprised primarily by a gravel lot which borders the northern sectors of the plant building. The topography of the site is relatively flat with a slight grade to the west. Refer to Map A (Figure 2-1) for a topographic site location.

2.3 Site History

From the mid 1920's to about 1950 the site was owned by Mr. Ohm who operated an electrical business. Although the basic operations of Mr. Ohm's activities is unknown, it is assumed that he dealt with the sale, repair and/or resale of new and used electrical equipment (i.e. transformers, capacitors, motors, etc.).

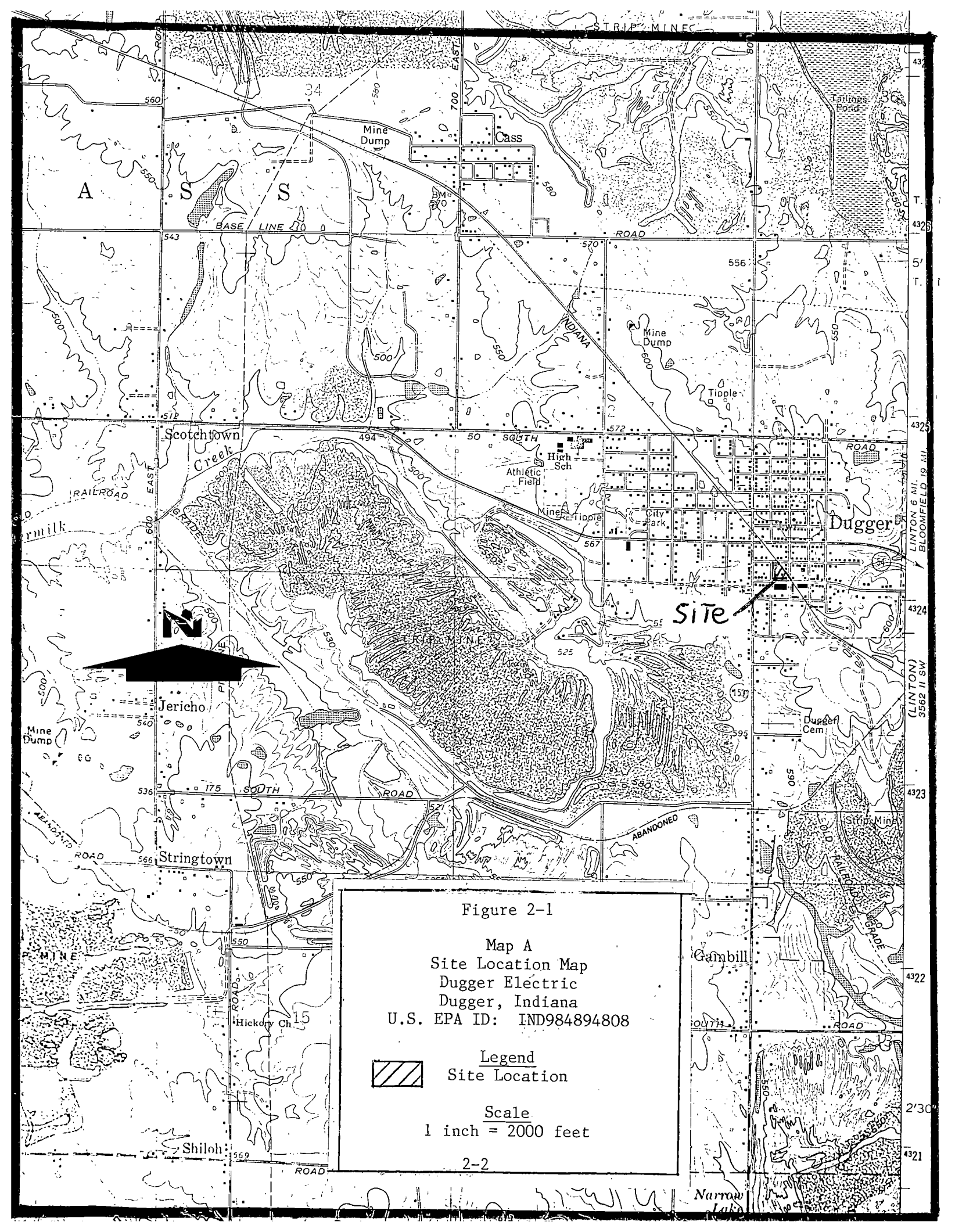


Figure 2-1

Map A
Site Location Map
Dugger Electric
Dugger, Indiana
U.S. EPA ID: IND984894808

Legend
Site Location

Scale
1 inch = 2000 feet

In the early 1950's the site was bought by Mr. Bill Hunley. Mr. Hunley continued the business and dealt in about the same type of activities as Mr. Ohm (buy and sell electrical equipment, replace transformer bushings, rewind electric motors, painting transformers, etc.).

In the mid 1980's the site was given to Mr. Robert Hunley, Bill Hunley's son, who conducted the same line of work as his father.

On March 22, 1990, Office of Environmental Response (OER) of the Indiana Department of Environmental Management responded to an initial incident at this site. Water with a visible oil sheen was lowing from a storm ditch which runs underneath the site property to an open ditch. This ditch flows through the city of Dugger and empties into Dugger Lake. Over 600 transformers were observed on site.

During a sampling event conducted by IDEM, state clean-up section, sediment samples were obtained east (upgradient) and west (downgradient) of the Dugger Electric site within Dugger Ditch. The sampling was conducted on 5-30-90. Lab analysis revealed the upgradient and downgradient samples to have PCB concentration levels of .1 ppm and 10 ppm respectively. The upgradient low level PCB detection may be attributed to seasonal backflooding. In addition, on-site soil sampling results revealed a PCB concentration of 50 ppm. For additional information, refer to the Preliminary Assessment completed in February 1991.

Another sampling event conducted by IDEM, State Clean-up section occurred March 22, 1991. Two samples east of the site within a portion of Dugger Ditch were found to contain no detectable levels of PCBs suggesting that no PCB source up gradient to the Dugger Electric site exists. Refer to Appendix H concerning sample location, sample analysis, and laboratory quality control memorandum.

Dugger Electric was notified by an August 9, 1991 letter that the 60-day moratorium for negotiations for an RI/RS had ended. IDEM is coordinating with ABB Environmental in development of a work plan to conduct an RI/FS. The projected date for completion of a draft work plan is October 3, 1991.

On August 15, 1991, 76 PCB-contaminated transformers were removed from the site for disposal at S.D. Myers in Akron, Ohio. Approximately 600 transformers remain at the site. Dugger Electric is currently involved in negotiations with IDEM concerning an agreed order for an immediate removal of the transformers. The deadline for negotiations is August 21, 1991.

SECTION III

SCREENING SITE INSPECTION PROCEDURES AND FIELD OBSERVATIONS

3.1 Introduction

This section outlines the procedures and data gathering during the SSI at the Dugger Electric and Equipment Company. The subsections describe the site representative interview, reconnaissance survey, sampling procedures, and other observations.

3.2 Site Representative Interview

In January, Mark Jaworski, Project Manager, and Mr. Robert Blaesing, Environmental Scientist met with Mr. Robert Hunley of Dugger Electric. A second interview was conducted on July 25, 1991 with Mark Jaworski, Pat Austin, Chemist for IDEM, and Mr. Robert Hunley.

3.3 Reconnaissance Inspection

Following the meeting on July 25, 1991, IDEM's field team walked the property and established on-site sample locations for water, soils, and sediments. Sample locations offering the best opportunity to assess the potential for off-site and background soil and water sample locations were established to evaluate the environmental impact from the Dugger Electric site.

3.4 Inspection Observations

Inspection of the site revealed the following observations:

A. The area behind the plant building is fenced and graveled.

B. Over 600 transformers of various sizes and shapes exist on the gravel area.

C. An on site cased well is located in the south center sector of the gravel area.

D. A storm drain is present under the gravel area.

E. Numerous unused and used transformer bushing and other miscellaneous electrical debris are situated on the southern sector of the gravel area.

F. Drums containing the bailed oil from the on site cased hole are present and sealed.

G. A fence has been constructed around a small portion of the storm drain outlet located 50-75 feet west of the Dugger Electric site.

Map B, a Site Features Map (Figure 3-1) can be found on page 3-3.

3.5 Sampling Procedures and Collection

Samples were collected by IDEM personnel at locations selected during the reconnaissance inspection to determine whether contaminants as outlined by the Indiana Site Investigation Target Analyte List (ISITAL) were present at the site. The ISITAL contaminants along with corresponding quantitation/detection limits are provided in Appendix D.

A total of 18 samples including trip blanks and were collected in conjunction with the Dugger Electric and Equipment SSI. Samples S712 through S733 were obtained except for samples S718 through S721. Water sample S712 was a trip blank, sample set S714/S715 was a duplicate water sample while sample set S727/S728 was a duplicate soil sample.

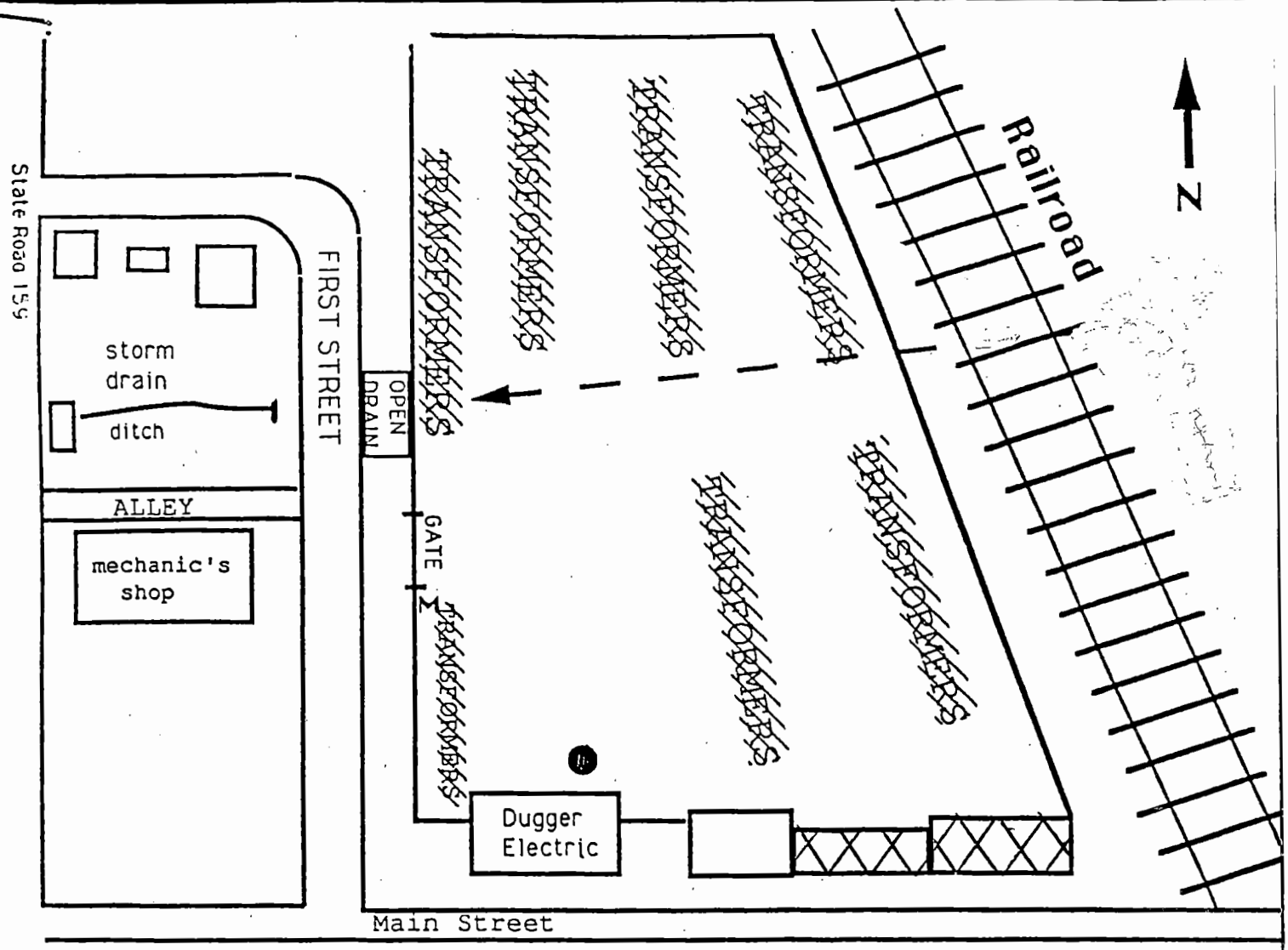


Figure 3-1

Map B
Site Features Map
Dugger Electric
Dugger, Indiana
U.S. EPA ID: IND984894808

Legend

Rows of Transformers

On site Well

Underground Storm Ditch

Surface Storm Ditch

Resident Home

Other Businesses

Scale
1 inch = 100 feet

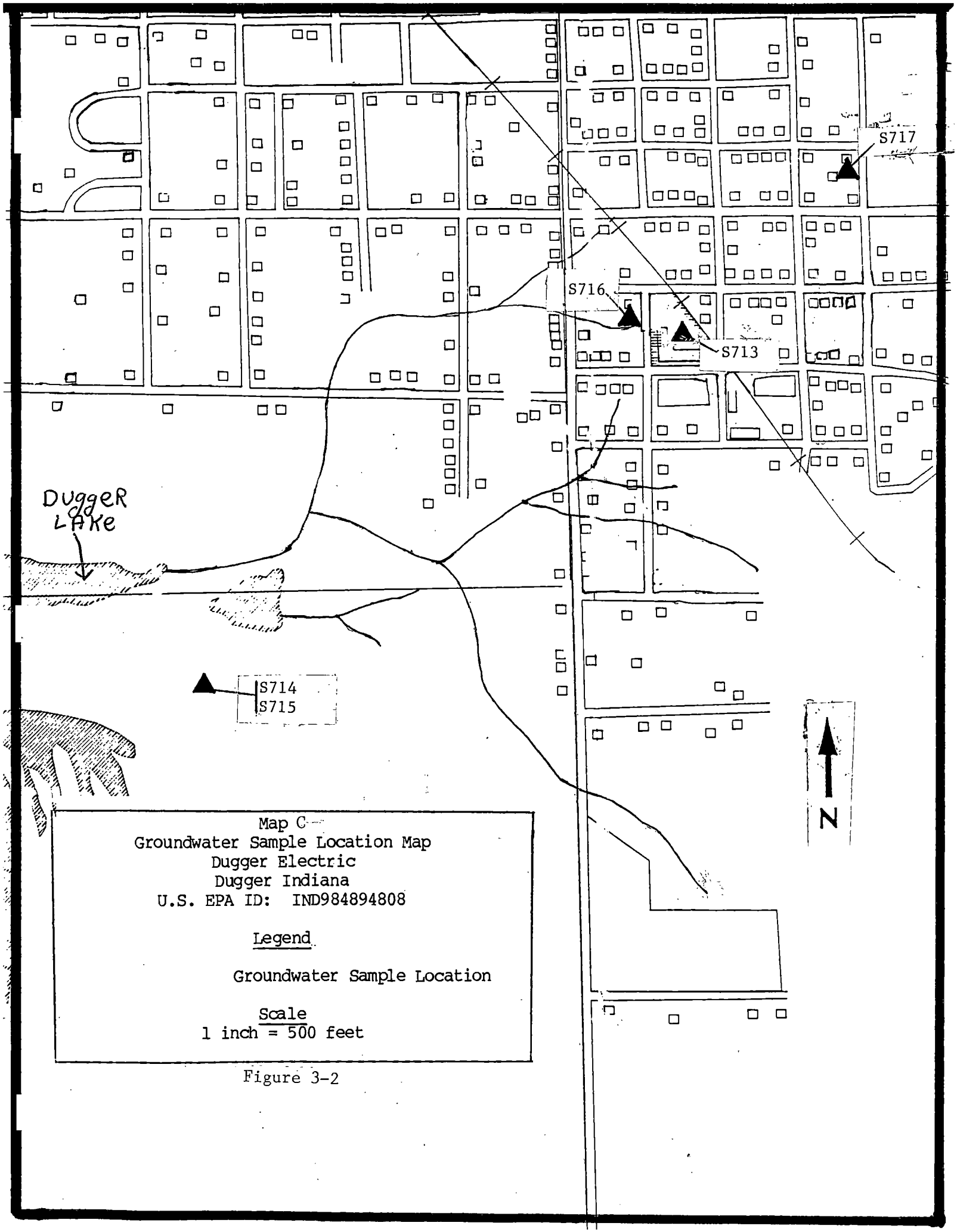
The following tables depicts the sample identification number, location of sample, and any comments concerning each sample.

Groundwater

Sample ID	Location	Comments
S712	IDEM Bradbury Office	Trip Blank
S713	On site cased well	Oil-light to dark green with a slight tan tint aromatic slight water with sample approx. 50 ft deep
S714	IDEM monitoring well #2 located at the southeast sector of Dugger Lake	clear somewhat murky colorless, no odor
S715	Duplicate of S714	Duplicate of S714
S716	Loyd Pirtle P.O. Box 222 Dugger, IN 47848	Open dug well, clear odorless
S717	David Daviess Box 376 Dugger, IN 47848	Clear, odorless; dug well

The groundwater well sampling locations were chosen because of their proximity to the site and the potential groundwater flow. The locations were selected so that the potential effect on groundwater quality could be evaluated. Refer to Map C (Figure 3-2) on page 3-5 for a map location of each groundwater well sample.

Groundwater well samples S716 were obtained from dug wells and water was obtained by bailing. Groundwater sample S717 was also from a dug well but obtained by a surface hand pump.



Map C
Groundwater Sample Location Map
Dugger Electric
Dugger Indiana
U.S. EPA ID: IND984894808

Legend

Groundwater Sample Location

Scale
1 inch = 500 feet

Figure 3-2

The water was allowed to discharge for 15 minutes from the hand pump before samples were collected to ensure that the sample sources had been purged of standing water. Water samples S713, S714 and S715 were obtained from wells at depths between 25 and 50 feet. Water from these two wells were obtained by bailing. The wells were purged according to IDEM protocol before the sample was taken.

As directed by U.S. EPA, all residential well samples were analyzed for TCL compounds and TAL analytes.

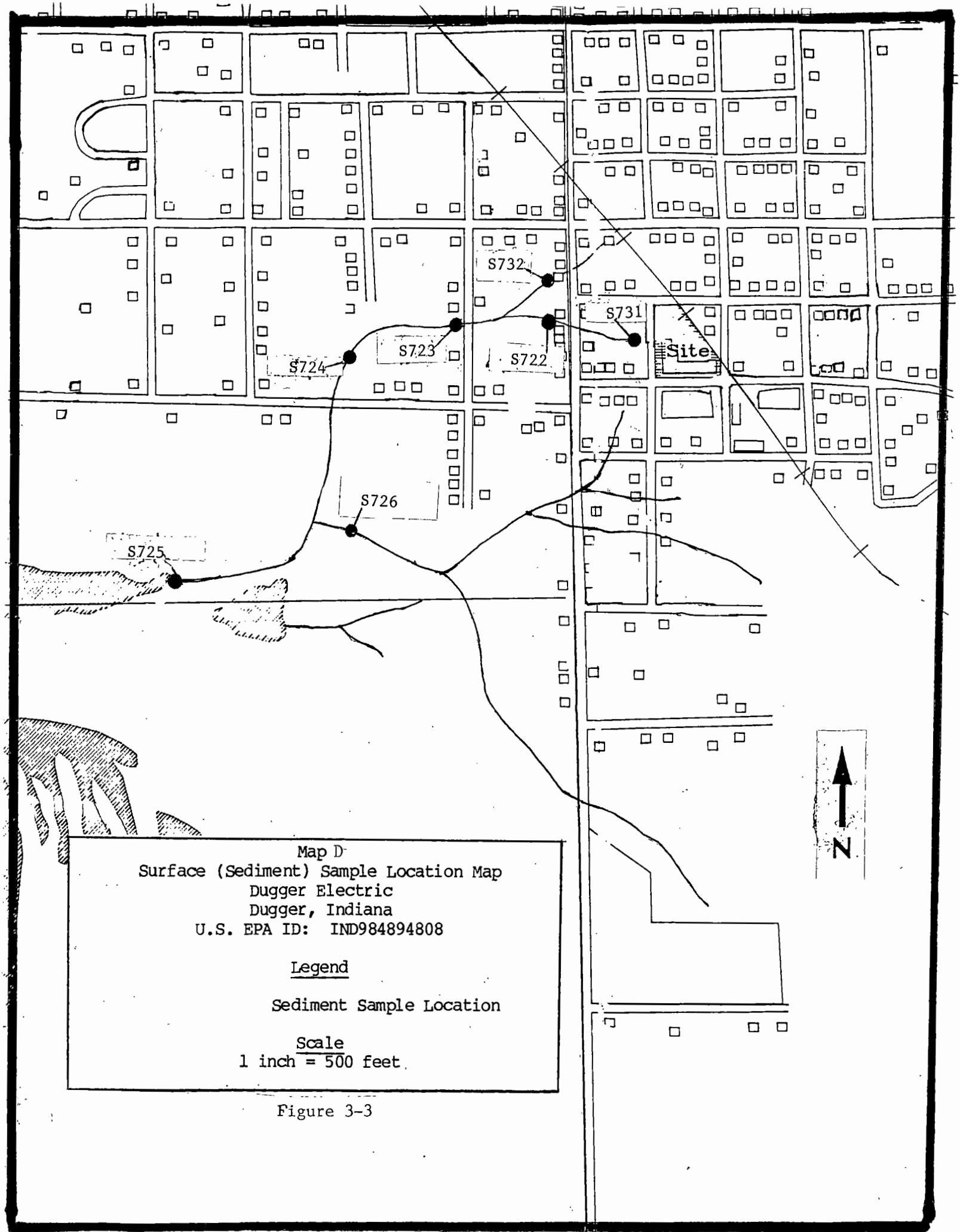
Sediment Samples

Sample ID	Location	Comments
S722	Dugger Ditch, less than 200 ft. from residential homes, approx. 450 west of	Gray-black, muddy, sandy very gravely
S723	Dugger Ditch; 30 ft. west of Mason Street	Muddy ground, dark gray-brown
S724	Dugger Ditch; 125 ft. north of Mason Street	Clayey, brown to gray, silty, slightly sandy
S725	Dugger Ditch located approx. 60 ft. from the inlet of Dugger Lake	Brown gray, silty soil, organic matter, slightly sandy
S726	Southern most tributary to Dugger Ditch; approx. 150 ft. from the confluence material	Medium brown, sandy, moist, somewhat silty, organic
S731	Dugger Ditch at outfall on west side of 1st Street; within the fenced in area	Wet, organic, sandy mud, dark gray to black
S732	Northern Tributary of Dugger Ditch; north of S722, west of pizza restaurant	Background Dugger Ditch sample-dark gray, very sandy, some gravel, slightly organic

Sediment samples were obtained using a plastic scoop. The plastic scoop was used to obtain sediment material from Dugger Ditch. The material on the scoop was directly transferred into the sample jar by hand. Latex surgical gloves were worn and discarded between the collection of each sample. A new plastic scoop was used for each sediment sample. Refer to Figure 3-3 (Map D) on page 3-8 for a location of each sediment sample. As addressed in Part II (page 2-3) of this report, previous sampling by IDEM, State Clean-up section revealed significant PCBs on the Dugger Electric site, PCBs in Dugger Ditch downgradient to the site, and trace amounts of PCBs east of the site (upgradient). This information suggests that PCBs were emanating from the site and no significant sources exist east of the site. Therefore no sample east of the site was taken.

Soil Sample

Sample ID	Location	Comment
S727	On-site soil sample 15 feet east of west fence line; in between transformers	7 inch depth, brownish gray organic, slt. sandy, mainly silt size particles
S728	Duplicate of S727	Duplicate of S727
S729	Mid site on-site soil sample; 45 feet west of east fence line, 160 feet south of north fence line; next to transformer #8047473	10" depth, gray to tan sand and limestone gravel, slight oil smell
S730	On site soil sample, 4 feet east of west fence line and north of west fence gate at the first row of transformers	Dark gray, highly organic, slight limestone chunks
S733	Center sector of Dugger Park, east of tennis court	Tan, organic clay



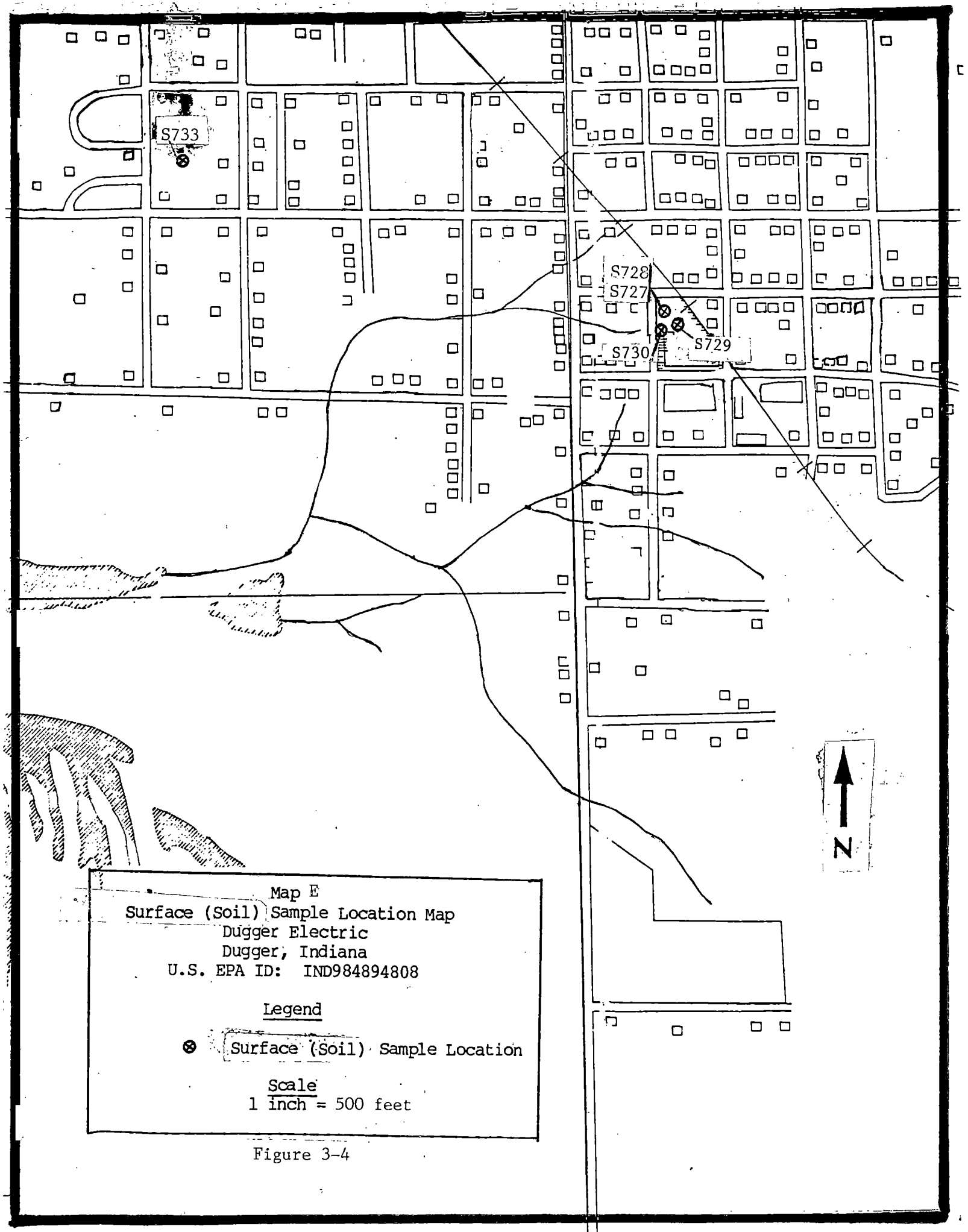
Map D
Surface (Sediment) Sample Location Map
Dugger Electric
Dugger, Indiana
U.S. EPA ID: IND984894808

Legend

Sediment Sample Location

Scale
1 inch = 500 feet

Figure 3-3



Map E
Surface (Soil) Sample Location Map
Dugger Electric
Dugger, Indiana
U.S. EPA ID: IND984894808

Legend

⊗ Surface (Soil) Sample Location

Scale
1 inch = 500 feet

Figure 3-4

Surface soil samples were obtained using a plastic scoop. The scoop was used to obtain soil material from the surface directly into the jar. Latex surgical gloves were worn and discarded between the collection of each sample. Refer to Figure 3-4 (Map E) on page 3-9 for a map location of each surface sample.

Standard documentation procedures were adhered to during the collection of all surface, groundwater, and sediment samples. Decontamination procedures included the scrubbing of all equipment (e.g., auger, trowels, bowls, spoons) with a solution of Alconox detergent and distilled water, and triple rinsing the equipment with distilled water before the collection of each sample.

SECTION IV

ANALYTICAL RESULTS

4.1 Introduction

This section includes results of chemical analysis of IDEM-collected surface soil samples, subsurface soil samples, sediment samples, and groundwater samples for ISITAL contaminants. All ISITAL concentrations for each sample can be found in Appendix D.

4.2 Sample Analysis

The laboratory results from sampling of the Dugger Electric site have been determined to be acceptable for use and meet the criteria contain in the Indiana Quality Assurance Project Plan (QAPP) (refer to Analytical Results on page 4-4).

All soil and sediment samples obtained were analyzed for total solids, routine and non-routine metals, and PCBs. All metals within soils were found to be within normal limits that can be found throughout the State of Indiana. Although soil/sediment samples (S727, S728, S730, S722, and S723) revealed low concentrations of mercury (.34 mg/l/.28 mg/l, .16 mg/l, .063 mg/l, and .071 mg/l respectively) it should be noted that these results were near the detection levels for mercury. Even though the above mentioned samples were the only samples in which mercury was detected, the concentration levels were within the common range found within natural soils (U.S. EPA Office of Solid Waste and Emergency Response, SW-874, April 1983, page 273, Table 6.46). An elevated level of lead was detected in sample S730 (350 mg/l) but this level is considered estimated because of poor field duplication. Field duplicate samples are used to establish the representativeness of sampling, in

consideration of sampling error and/or sample heterogeneity. Other analytes in which field duplicates do not compare well and are considered estimated in soils are aluminum, chromium, tin, and zinc. All other analytes compare well in the field duplicates for soils.

All PCB results are semiquantitative for soil and water samples. Low levels of Aroclor 1260 were found in soil samples S726, S729, S730 and sediment sample S731 (.56 mg/l, 3.3 mg/l, 2.9 mg/l, and .35 mg/l respectively).

Aroclor 1260 found in sample S722 could not be confirmed because of poor confirmatory peak resolution. Thus the .26 mg/l of PCB (Aroclor 1260) detected in sample S722 is unusable. The detection of PCBs in soil samples S729, S730, and sediment sample S731 indicates that PCBs have migrated from the Dugger Electric site into Dugger Ditch. Since PCBs were detected in sediment sample S726, (a southern tributary of Dugger Ditch - refer to Map D), and no PCBs were detected in Samples S723 and S724 (upstream from the southern tributary), it appears that there may be an additional source of PCB contamination within the Dugger Ditch drainage system.

The following metals in water samples are estimates: Fe, due to poor field duplication; Cd, due to initial calibration blank contamination; and Cu and Zn, due to preparation blank contamination. Oil sample S713's inorganic estimates include: Na, Cu, and Ag, due to preparation blank contamination; and Sb, Pb, Ni and Zn, due to poor matrix spike recoveries.

VOA results were in control. VOAs were detected in oil sample S713. PCB results are, in general, estimated. The majority of QC checks throughout the analyses were in control. However, the laboratory experienced matrix spike/matrix spike duplicate difficulties in all matrices. This biases the quantitation of all PCBs.

Sample S713 is the only groundwater sample in which PCBs were detected. A concentration level of PCB (Aroclor 1260) was found to be 940 mg/l in that sample. Although the laboratory has confirmed the existence of PCBs in sample S713 qualitively, the 940 mg/l value is considered an estimate due to matrix spike/matrix spike duplicate difficulties. Water sample S713 was obtained from an approximate 50 foot deep cased water well located on the Dugger Electric site. The S713 sample was obtained by bailing. A greenish brown oil encompassed approximately 90% of the fluid sample. The rest of the sample was comprised with water.

VOAs were also detected in sample S713. As previously stated, VOA results were in control. The following VOAs and their corresponding concentration levels are as follows:

VOA	Concentration Level
Ethyl-Benzene	190,000 ug/l
Toluene	73,000 ug/l
Xylene	1,100,000 ug/l

No VOAs or any PCBs were detected in any of the groundwater samples obtained except in the S713 water sample. All metal concentrations within the residential wells were within normal limits that can be found throughout the state.

To: Mark Jaworski
Site Investigation

Date: 9-23-91

From: Pat Austin PA 9-24-91
Site Investigation

Re: Review of laboratory results for Dugger Electric site. Sample #s S712-S733 (EMS A234843-860), collected 7-24 and 7-25-91.

I have reviewed the attached laboratory results and have determined that they are acceptable for use. These results have been evaluated for the quality criteria contained in the Indiana Quality Assurance Project Plan. Any exceptions to the acceptance of this data will be identified in this memorandum and should remain attached to the original results.

The following analyses were performed by the laboratory as requested: metals and PCBs in soil; metals, VOAs and PCBs in waters and oil.

The following inorganic analytes among soils are estimates: Be, due to continuing calibration blank contamination; Sb and Ti, due to poor matrix spike recoveries; and Al, Cr, Pb, Sn and Zn, due to poor field duplication. Among waters, the following inorganics are estimates: Fe, due to poor field duplication; Cd, due to initial calibration blank contamination; and Cu and Zn, due to preparation blank contamination. Oil sample S713's inorganic estimates include: Na, Cu, and Ag, due to preparation blank contamination; and Sb, Pb, Ni and Zn, due to poor matrix spike recoveries.

VOA results were in control. VOAs were detected in oil sample S713. PCB results are, in general, estimated. The majority of QC checks throughout the analyses were in control. However, the laboratory experienced matrix spike/matrix spike duplicate difficulties in all matrices. This biases the quantitation of all PCBs. Separately, poor confirmatory peak resolution leads to unusable Aroclor 1260 results for sediment sample S722.

Field duplicate samples are used to establish the representativeness of sampling, in consideration of sampling error and/or sample heterogeneity. The duplicates compare well, except for those noted above.

No unestimated inorganics were detected in soils above either background or levels commonly found in soils. Pb was elevated in soil sample S730, but this value is estimated. Estimated elevated levels of Fe, Cu and Zn were found in oil sample S713. Elevated levels of Pb, Ba, Ni and Al were found in oil sample S713. Estimated elevated levels of Fe were found in all well samples.

Fairly high levels of ethylbenzene, toluene, and total xylenes were found in oil sample S713. All PCB results are semiquantitative. An apparently high level of Aroclor 1260 was found in S713. Low levels of Aroclor 1260 were found in soil samples S726, S729, S730 and sediment sample S731. Aroclor 1260 found in S722 could not be confirmed and hence is not usable.

SITE INVESTIGATION SECTION

TARGET ANALYTES DETECTED

Site Name: Dugger Electric Prepared By: Pat Austin

Date Sampled: 7/24/91 Date Reported: 9/6/91 Lab: EMS

			Milligrams/Liter								
Sample Number	Type & ID #	Total solids	As	Pb	Se	Tl	Hg	Ba	Cd	Cr
Lab / IDEM		%								
Notes:										
A234844/S712	Trip Blank	NR								
A234843/S713	MW-1			11				10		
A234845/S714	MW-2							0.039		
A234846/S715	Dupe MW-2							0.043		
A234847/S716	RW-1			0.0031				0.038		
A234848/S717	RW-2							0.016		
/										
A234849/S722	Sed-1	68	4.0	92			0.063	66	1.1	12
A234850/S723	Sed.-2	68	6.0	81			0.071	220	1.6	16
A234851/S724	Sed.-3	68	3.0	52				57	0.84	11
A234852/S725	Sed-4	65	2.8	42				58	0.80	11
A234853/S726	Sed-5	68	5.9	31				53	1.3	7.8
A234854/S727	Soil-1	89	14	140			0.34	160	1.0	13
A234855/S728	Dupe Soil-1	89	17	94			0.28	140	1.1	7.3
A234856/S729	Soil-2	90	5.7	44				59	0.98	8.7
A234857/S730	Soil-3	89	12	350	2.0		0.16	120	2.6	9.1
A234858/S731	Sed-6	66	8.5	99	0.88		0.11	88	1.7	9.8
A234859/S732	Background Sed/Soil	80	12	57	1.4			81	1.9	12
A234860/S733	Background Soil	95	4.8	41	0.24			91	0.57	6.6

Empty Box indicates NON-DETECTABLE NR=> NOT RUN

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‡=> Field Duplicate Signed: _____ Date: __/__/__

SITE INVESTIGATION SECTION

TARGET ANALYTES DETECTED

Site Name: Dugger Electric Prepared By: Pat Austin

Date Sampled: 7/24/91 Date Reported: 9/6/91 Lab: EMS

		Milligrams/Liter								
Sample Number	Type & ID #	Ni	Ag	Al	Sb	Be	Co	Cu	V	Zn
Lab / IDEM										
Notes:										
A234844/S712	Trip Blank	0.012						0.024		0.032
A234843/S713	MW-1	1.7		3.0				2.5		6.6
A234845/S714	MW-2			0.50				0.021		0.064
A234846/S715	Dupe MW-2			0.62				0.029		0.076
A234847/S716	RW-1	0.036		0.35				0.026		0.56
A234848/S717	RW-2	0.016		0.20				0.023		0.086
/										
A234849/S722	Sed-1	10	1.0	4500		1.6	4.6	16	13	120
A234850/S723	Sed.-2	11		5400		1.7	15	18	22	160
A234851/S724	Sed-3	9.1		4500		1.3	4.8	10	12	86
A234852/S725	Sed-4	11		7100		1.3	5.6	9.2	15	72
A234853/S726	Sed-5	10		5600		1.3	5.6	8.8	14	85
A234854/S727	Soil-1	14		8000		1.3	8.0	28	19	110
A234855/S728	Dupe Soil-1	9.6		4700		1.8	6.5	31	15	78
A234856/S729	Soil-2	9.1		6700		1.3	5.0	14	18	67
A234857/S730	Soil-3	13	1.0	4500		1.8	4.5	76	14	290
A234858/S731	Sed-6	12		4000		1.8	5.7	37	16	230
A234859/S732	Backgnd -Sed	17		3100		1.8	5.2	17	18	350
A234860/S733	Backgnd. Soil	7.9		5700		1.3	10	7.2	14	27

Empty Box indicates NON-DETECTABLE NR=> NOT RUN

*=> _____ Blank (Type)

‡=> Field Duplicate Signed: _____ Date: __/__/__

SITE INVESTIGATION SECTION

TARGET ANALYTES DETECTED

Site Name: Dugger Electric Prepared By: Pat Austin

Date Sampled: 7/24/91 Date Reported: 9/6/91 Lab: EMS

		Milligrams/Liter								
Sample Number	Type & ID #	Ca	Fe	Mg	Mn	K	Na	Li	Mo / Sr	Sn / Ti
Lab / IDEM										
Notes:										
A234844/S712	Trip Blank									
A234843/S713	MW-1	30	7.9				31			
A234845/S714	MW-2	13	0.43	6.4	0.10	2.7	180	0.011	0.012 / 0.12	
A234846/S715	Dupe MW-2	13	1.0	6.6	0.11	3.2	190	0.013	0.012 / 0.12	
A234847/S716	RW-1	100	0.92	66	0.47	3.1	87		0.39	
A234848/S717	RW-2	68	2.6	50	0.41	1.3	33	0.028	0.11	
/										
A234849/S722	Sed.-1	17000	12000	2100	490	440	100	3.3	25	53
A234850/S723	Sed.-2	17000	27000	2600	2000	450	90	3.4	24	55
A234851/S724	Sed-3	27000	10000	2900	320	450	67	4.4	29	37
A234852/S725	Sed-4	7700	12000	2000	440	620	68	6.7	13	40
A234853/S726	Sed-5	1400	22000	960	310	470	42	5.9	7.4	35
A234854/S727	Soil-1	46000	16000	1800	1100	740	49	5.6	57	11 / 61
A234855/S728	Dupe Soil-1	66000	11000	1500	930	470	35	2.5	52	6.0 / 85
A234856/S729	Soil-2	66000	13000	2300	290	490	65	5.4	71	53
A234857/S730	Soil-3	85000	11000	3200	280	700	98	4.7	71	6.5 / 100
A234858/S731	Sed-6	15000	17000	2100	1100	440	99	3.1	29	150 / 69
A234859/S732	Backgrd sed.	38000	17000	1700	3000	350	220	2.4	41	26 / 65
A234860/S733	Backgrd. Soil	630	8700	800	1100	410		3.6	3.5	72

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‡=> Field Duplicate Signed: _____ Date: __/__/__

VOLATILE ORGANIC COMPOUNDS

Site Name: Dugger Electric Prepared By: Pat Austin

Date Sampled: 7/24/91 Date Reported: 9/6/91 Lab: EMS

Sample Number / Lab / IDEM	Type & ID #	Surrogate Recovery ave%R	I.S. area summary	Micrograms/Liter: Ethyl-benzene	Toluene	xylene (total)				
Notes:										
A234844/ S712	Trip Blank	OK	OK							
A234843/ S713	MW-1	D	"	190000	73000	1100000				
A234845/ S714	MW-2	OK	"							
A234846/ S715	Dupe MW-2	"	"							
A234847/ S716	RW-1	"	"							
A234848/ S717	RW-2	"	"							
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PCBs

Site Dugger Electric LOCATION Dugger

Date Sampled: 7-24-91 Date Reported: 9-6-91 Lab: EMS

SAMPLER(S)

Sample Number / Lab / IDEM	Type & ID #	SURROGATES		Milligrams/Liter Aroclor 1016	1221	1232	1242	1248	1254	1260
LIMITS OF DETECTION →	→	AV %R	?	. . .						
A234844/ 5712	Trip Blank	Ok								
A234843/ 5713	MW-1	DCB ↓								940
A234845/ 5714	MW-2	Ok								
A234846/ 5715	Dupe MW-2	"								
A234847/ 5716	RW-1	"								
A234848/ 5717	RW-2	"								
/										
A234849/ 5722	Sed.-1	"								0.26
A234850/ 5723	Sed.-2	"								
A234851/ 5724	Sed -3	"								
A234852/ 5725	Sed -4	"								
A234853/ 5726	sed -5	"								0.56
A234854/ 5727	Soil-1	"								
A234855/ 5728	Dupe Soil-1	"								
A234856/ 5729	Soil-2	"								3.3
A234857/ 5730	Soil-3	"								2.9
A234858/ 5731	Sed-6	"								0.35
A234859/ 5732	Backgrd Sed.	"								
A234860/ 5733	Backgrd-Soil	"								
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SECTION V

DISCUSSION OF MIGRATION PATHWAYS

5.1 Introduction

Potential migration pathways for contaminants emanating from Dugger Electric site are discussed in this section. Potential contaminant migration through groundwater, surface water (including Drinking Threat, Human Food Chain Threat, and Environmental Threat), soil and air exposure is discussed.

5.2 Groundwater

Groundwater at the site is available within the discontinuous and unconsolidated sand and gravel deposits within the glacial till. Groundwater can also be found within the bedrock (sandstones) and within the coal seams and within the voids of abandoned underground coal mines. The unconsolidated sand, and sand and gravel deposits are the principal aquifers of concern.

The unconsolidated deposits occur between 20 to 50 feet, depending upon the location in the county, are 2-10 feet thick, and are very permeable having an average hydraulic conductivity of 10^{-4} cm/sec to 10^{-3} cm/sec. These aquifers are separated by clay, silt, and loess (till). The till acts as a semi-permeable barrier between the aquifers. The semi-permeable confining layer, the till and loess, has an assumed conductivity of 10^{-6} X 10^{-8} cm/sec. The bedrock has a lower primary permeability, but fractures in the rock provide pathways for water movement. Solution features in limestone which may be present within the area can increase permeability significantly.

Coal seams also are relatively permeable. The most important pathway for groundwater movement in the area is the maze of underground mine shafts and tunnels that crisscross the area. These conduits can move water very rapidly compared to the natural flow through porous or fractured media. The flow direction from the site is probably to the southwest toward Dugger Lake. However, the impact of present and past mining activities can alter the flow direction. Refer to the Geological Assessment (Appendix E) concerning additional aquifer characteristics. In addition, the runoff and permeability characteristics of the soil material present could allow contaminants from the Dugger Electric site to slowly penetrate the semi-permeable layers of drift and enter into the underlying aquifer(s).

The entire population of Dugger, approximately 1,000 people, is hooked up to the Linton Municipal water system. However, after driving through the town and talking to several residents it was discovered that al least a quarter of the people still have private wells on their property. These wells are used for human drinking water and gardening purposes. These wells are used exclusively for drinking purposes when the Linton Municipal water system is interupted due to maintenance or failure. The maintenance or failure events occur 3 to 4 times a year. Refer to the original Preliminary Assessment concerning other drinking water activities from these private wells. The Linton Municipal Water Works obtains water from several groundwater wells. These wells are located over seven miles away to the east to southeast of the site.

There are two residential wells located within 200 feet of the Dugger Electric site. These two wells (20 to 50 feet deep) are located to the west of the site within the direction of groundwater flow. Residential water sample S716, obtained from a dug well located 50 feet west of the Dugger

Electric site, and all other off-site well samples, revealed no PCB, VOA, or metal contamination.

As addressed in Part IV, well sample S713, obtained from a 50 foot cased well located on the Dugger Electric site, revealed elevated levels of the following substances:

Substance	Concentration Level
PCB (Aroclor 1260)	940 mg/l (estimated)
Ethyl Benzene	190,000 ug/l
Toluene	73,000 ug/l
Xylene	1,100,000 ug/l

The S713 sample was an oil/water sample obtained from the on-site well by bailing. It should be noted that according to the State Clean Up Section of IDEM, past water/oil removal activities from the on-site well has not lowered the hydrostatic water level in the well. This observation suggest that the substances detected in the well are in direct contact with the underlying aquifer.

The Dugger Electric site has documented contamination of groundwater beneath the site. According to the Geological Assessment, the substances detected could migrate through the groundwater by way of the 20 to 50 feet of unconsolidated material above the bedrock or by way of mine tunnels which are numerous in the area.

5.3 Surface Water

Surface water drainage from the site is by way of a ditch (referred to as

Dugger Ditch) that flows from east to west across the site. Numerous storm drains on the site enhance the surface-water runoff into the ditch beneath the site. The ditch continues through the town of Dugger and discharges into Dugger Lake approximately 1500 feet west of the site. Flow in the ditch is intermittent. Dugger Lake is a final-cut impoundment lake in an old coal strip-mined area on the southwest side of Dugger.

Dugger Lake discharges into Buttermilk Creek. Buttermilk Creek flows into Busseron Creek approximately 7 miles west of Dugger Lake. The Dugger Electric site does not lie within a floodplain.

5.3.1 Drinking Water Threat

As addressed in section 5.2, all residents within the 4 mile radius of the Dugger Electric site obtain drinking water from the Linton Municipal Water Works and from their private groundwater wells. There are no known surface water intakes located within the 4 mile radius of the Dugger Electric site that are being solely used as human drinking water sources.

Although no surface water intakes used as human drinking water sources, exist, it should be noted that Buttermilk Creek and Busseron Creek is a potential sources of drinking water for cattle throughout this area.

Dugger ditch which captures the majority of surface drainage from the Dugger Electric site is not a potential source of drinking water for cattle due to the fact that the flow in the ditch is intermittent. Although the ditch is a direct migrational route for surface drainage into Dugger Lake, it should be noted that sample S731, obtained 100 feet west of the Dugger Electric site within Dugger ditch, was the only ditch sample in which PCBs were detected (.35 mg/l). No other sediment ditch sample (obtained downditch from sample S731) revealed PCBs (note that the PCB detection result of the

S722 sediment ditch sample, obtained downditch from sample S731 is unusable due to poor quality control).

5.3.2 Human Food Chain Threat

Dugger Lake, Buttermilk Creek, and Busseron Creek are primary fisheries within the 15 mile surface water pathway of the Dugger Electric site. Several people were observed fishing along the banks of Dugger Lake throughout the course of the SSI. As stated in 5.3.1, Dugger ditch is a direct migrational route for surface water drainage from the Dugger Electric site to Dugger Lake. Any substance which enters into the Dugger ditch may potentially flow into Dugger Lake. As also discussed in 5.3.1, PCBs were detected (.35 ug/l) in only one sediment sample (obtained approximately 100 feet west of the Dugger Electric site).

It should be noted that according to the Preliminary Assessment for the Dugger Electric site, a PCB fish consumption advisory was posted. The advisory was lifted in 1990 because PCB levels found in the fish samples were below health advisory limits. Since PCB migration from Dugger ditch to Dugger Lake (including Buttermilk Creek and Busseron Creek via Dugger Lake) may occur, it appears that the Human Food Chain may be threatened.

5.3.3 Environmental Threat

The Indiana Department of Natural Resources - Division of Nature Preserves - Heritage program has documented the sensitive environments and/or endangered or threatened species within the area (refer to Sensitive Environments Map Appendix G). Below in table form is the name of the sensitive environment or endangered/threatened species and the status of the environment or species. Note: The number associated with each

environment/species is a location area of the environment/species as located on the 15 mile Surface Water Pathway Map.

Location Number	Species/Environment	Status
1	Chrysopsis Villosa (plant)	Threatened
1	Taxidea Taxus (badger)	Threatened
1	Sistrurus Catenatus Catenatus (Eastern Massasauga)	Threatened
1	Strophostyles Leiosperma (Slick seed Wild Bean)	Threatened
Labeled on Map	Busseron Bottoms	Floodplain
Labeled on Map	Minnehaha State Fish and Wildlife Area	State Land Designated for Wildlife or Game Management

Due to the fact that the sensitive environments/species are subject to elevated PCB concentrations (as addressed in the surface water sample analysis of Part IV, Part V section 5.3.1 and 5.3.2, of this report), it appears that these environments/species are threatened.

5.4 Soil Exposure

Approximately 559 homes lie within 1/4 mile. Soil/sediment samples S731, S722, S732, S723, and S724 were obtained from individual properties (within Dugger ditch. Refer to Map D on page 3-8 for a sample location. Each sample

was collected on the residents' property less than 200 feet from the dwellings.

Sample S731 was the only residential soil/sediment sample in which PCBs were detected. A low level concentration of .35 mg/l of Aroclor 1260 was detected at this point. No other potentially hazardous substance was detected in any of the residential soil samples.

There are no schools or day care facilities within 200 feet of the Dugger Electric site. Dugger ditch and some of its tributaries appears to be the only overland migration route that might spread hazardous substances near residences south of the site. There are no confirmed reports or adverse health effects from on site or adjacent residents from soil contamination problems.

5.5 Air

No air samples were taken. A strong oil odor was observed when and only when the oil/water (sample S713) was being bailed out of the on-site cased well. No other odors were observed. No on-site burning had recently occurred. Presently there are no reports of adverse health effects resulting from the migration of hazardous substances through the air.

HEALTH ASSESSMENT

FOR

DUGGER ELECTRIC EQUIPMENT COMPANY

SULLIVAN COUNTY
DUGGER, INDIANA

February 1992

SUMMARY

The Dugger Electric facility in the City of Dugger, Sullivan County, Indiana, has been in operation since the 1920s. It has been accepting used transformers and other electrical equipment for reconditioning and possible resale. Environmental sampling was conducted on-site and off-site because of several reports of oil being discharged into an off-site drainage ditch and oil being burned on-site. The sampling revealed polychlorinated biphenyl (PCB) contamination on the Dugger Electric property, the adjoining drainage ditch, Dugger Lake, and the groundwater. PCBs are the major chemical of concern from the site. Oil burned at the site could have produced dioxin, dibenzofurans, and other byproducts of PCB oil combustion.

PCBs have been used as coolants and lubricants in transformers, capacitors, and other electrical equipment. The manufacturing of PCBs was banned in the United States in October 1977 because of evidence that PCBs accumulate in the environment. Animal experiments have shown that some PCB mixtures produce adverse health effects that include liver damage, skin irritations, reproductive and developmental effects, and cancer. Human studies show that exposure to PCBs can cause irritations such as acne-like lesions and rashes, and has been associated with malignant melanoma in exposed workers.

There are several site-related potential exposure pathways for the public. The drainage ditch flows through the City of Dugger resulting in the potential for public exposure to contaminants. Some of the fish sampled from Dugger Lake were contaminated with PCBS. Because of the possible exposure through ingestion of PCB-contaminated fish by the public, there is a limited fish advisory for some species of fish in Dugger Lake. On-site workers may also be exposed to PCBs at levels of concern.

BACKGROUND

A. SITE DESCRIPTION AND HISTORY

The Dugger Electric site is located in Dugger, Sullivan County, Indiana in the middle of a residential/commercial area (Figure 1). There are two parcels of land related to the site. The first parcel is bounded by Main Street to the south, First Street to the west, an open field to the north, and a railroad track to the east. The second parcel of land lies south of the first parcel. It is bounded by Second Street to the west, Station Street to the south, Main Street to the north, and railroad tracks to the east. Together, these parcels occupy 2 to 3 acres of land. A drainage ditch originating from the site flows through the City of Dugger and discharges into Dugger Lake. Dugger Lake is approximately 1 mile away from the site. The facility has been operating since the 1920s as a reconditioner of used transformers and other electrical equipment. The site and the City of Dugger lie above abandoned underground coal mines.

Approximately 600 used transformers of various sizes are stored uncovered on the ground throughout the site. Many of the transformers are rusty and have oil stains around the drain valves. According to the owner, none of the transformers currently stored at the site contain PCBs. Steel drums and other miscellaneous electrical equipment are also scattered across the property. An 8-inch, steel-cased, drill hole is located just north of the Dugger Electric building. The drill hole is approximately 55 feet deep and contains both water and PCB-contaminated oil. A storm drain runs underneath the Dugger Electric site to the drainage ditch on the west side of the property. There have been numerous reports that oil was burned at the site (ABB Environmental Services, Final Work Plan).

Access to the site is restricted by a chain-link fence on the north, east, and west. There is a building located on the southwest corner of the property which is used by Dugger Electric to store transformers, electrical equipment, and miscellaneous parts.

A complaint was reported on March 27, 1990, to the Indiana Department of Environmental Management (IDEM) concerning oil flowing in a ditch leading from the site through the City of Dugger and discharging into Dugger Lake. The storm drainage ditch originates on the east side of the northern section (outside the fence) and flows below the train tracks and the site. The drain pipe runs below First Street and ends in a small ditch west of the site. This area is restricted by a chain-link fence. The ditch becomes larger behind a former gas station. The drain goes below S.R. 159 and a residence, and surfaces into another ditch that continues toward Dugger Lake. Despite efforts by Dugger Electric to stop the flow of oil into the ditch, an oily sheen continues to

flow from the property, and Dugger Electric maintains hay bales and absorbent pads to prevent downstream migration of the oil.

Oil stains are visible on the stored electrical equipment and soil at the site. Sampling of soil on the property, and water and sediment from the ditch, confirmed the presence of PCBs. Sediment samples collected from Dugger Lake also confirmed the presence of PCBs. A limited fish consumption advisory is in effect for Carp and Catfish in Dugger Lake. This is primarily due to the difficulty in obtaining samples of these species for testing, and because these two species are generally the most likely to be contaminated based on sampling data from other rivers and streams. The results of tests on other species of fish were below the health advisory limits.

In March 1991, the 55-foot drill hole contained approximately 15 feet of oil on top of 2-3 feet of groundwater. Laboratory test results from the oil showed the presence of Aroclor-1260 at 740 ppm. Although over 4,000 gallons of PCB-contaminated oil were removed from the drill hole as of September 1991, the oil continues to recharge the hole.

A municipal water system supplies water to all Dugger residents through water purchased from Linton, Indiana. A few private groundwater wells still exist; however, it is unknown if these wells are still being used.

Seven monitoring wells were installed by ABB Environmental between April 2 and 18, 1991, to monitor the groundwater in and around the zone of contamination at the Dugger Electric facility. Cuttings and formation water were collected for laboratory analysis of PCBs. PCB concentrations between 0.1 and 0.2 ppb were detected in three groundwater samples. From April 18 to 23, 1991, re-sampling of the previous seven monitoring wells, a spring, and thirteen drilled holes in the vicinity of Dugger did not detect PCBs.

Dugger Electric has: 1) placed booms in the ditch to prevent migration of the oil downgradient of the site, 2) constructed a fence to restrict public access, and 3) sent the containers holding the recovered PCB oil to the Aptis/Westinghouse incinerator for disposal.

B. SITE VISIT

On February 7, 1992, Dr. Gregory Steele and Ravishankar Rao of the Indiana State Department of Health (ISDH) and staff from IDEM visited the site. During the site inspection we observed the following:

1. Each of the two on-site parcels of land were completely fenced. Entrance to the north portion is from the Hunley offices (entrance from Main Street) and a locked gate on the west side of the property.

2. Transformers were observed on both sections of the site. The majority, however, were found on the southern section.

3. A small portion of the drainage pipe is exposed on the west side of the site outside the fence prior to its discharge into the ditch. The ditch was surrounded by a 6-foot chain-link fence with barbed wire. Absorbent pads and hay bales were placed in the ditch to absorb any oil.

4. The ditch which passes behind a former gas station and a residence is not fenced. This section of the ditch continues behind several residences toward Dugger Lake.

C. DEMOGRAPHICS, LAND USE, AND NATURAL RESOURCE USE

The Dugger Electric facility is located in Dugger, Indiana, in a residential/commercial area. The population of Dugger in 1990 was 1,150 persons with the majority (99+%) of the population being white. Information regarding general social and economic characteristics of the city are unavailable; however, information on Sullivan County is available. The population of Sullivan County in 1990 was 18,993 persons with 18,905 persons being white.

The City of Dugger overlies abandoned underground coal mines. These old mines are estimated to be 80 feet below the surface at the site. The depth of the groundwater at the site is unknown. Dugger Lake, which is approximately 1 mile southwest of the site, is assumed to be the ultimate recipient of surface water from the Dugger Electric property. A drainage ditch leading from the site discharges into Dugger Lake.

D. HEALTH OUTCOME

This subsection identifies the relevant, available databases; their evaluation occurs in the PUBLIC HEALTH IMPLICATIONS section. Cancer may be a plausible health outcome from long-term exposure to PCBs and other by-products of PCBs. The ISDH maintains a statewide cancer registry; however, data regarding cancer incidence by city and county are not yet available. In addition, the ISDH maintains a mortality database by county. Mortality data on Sullivan County cancer deaths are available. The public health implications of these data will be evaluated in the HEALTH OUTCOME DATA EVALUATION subsection.

COMMUNITY HEALTH CONCERNS

The following are community health concerns derived from correspondence to the ISDH from citizens.

1. Are the fish in Dugger Lake contaminated with PCBs? Are the fish safe to eat?

2. Will site-related chemicals pose a cancer risk to individuals living along Dugger Lake?

ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS

The tables in this section list the chemicals detected. We evaluate these chemicals in the subsequent sections of the Health Assessment and determine whether exposure to them has public health significance. The ISDH selects and discusses these chemicals based upon the following factors:

1. Concentrations of chemicals on and off the site.

2. Field data quality, laboratory data quality, and sample design.

3. Comparison of on-site and off-site concentrations with background concentrations, if available.

4. Comparison of on-site and off-site concentrations with health assessment comparison values for (1) noncarcinogenic endpoints and (2) carcinogenic endpoints.

5. Community health concerns.

In the data tables that follow under the ON-SITE CONTAMINATION and OFF-SITE CONTAMINATION subsections, the listed chemical does not mean that it will cause adverse health effects from exposures. Instead, this list indicates which chemicals will be evaluated further in the Health Assessment.

The data tables include the following acronyms:

EMEG = Environmental Media Evaluation Guide

ppm = Parts per million

ppb = Parts per billion

RfD = Reference Dose

TRI = Toxic Chemical Release Inventory

Comparison values for the Health Assessment are chemical concentrations in specific media that are used to select chemicals for further evaluation. These values include Environmental Media Evaluation Guides (EMEGs). EPA's Reference Dose (RfD) is an estimate of the daily exposure to a contaminant that is unlikely to cause adverse health effects.

The Toxic Chemical Release Inventory (TRI) is a EPA database that contains information on chemical releases of industries in the United States. It is used to determine the potential sources of contamination near NPL sites. A computer search was conducted of the most recent toxic release inventory (TRI89) data to determine the number of industries near the site within the City of Dugger (zip code = 47848). The data did not show any industries with chemical releases in Dugger, Indiana.

A chemical is selected as a chemical of concern if: 1) it has no health comparison value and may be toxic to humans at specified levels, 2) it is a cancer causing agent, and 3) it is found in concentrations higher than its health comparison value.

A. ON-SITE CONTAMINATION

Groundwater - On-Site Well

On December 26, 1990, samples were taken from an on-site well. Chemicals detected included chlorobenzene and Aroclor-1260 (Table 1). Aroclor-1260 (PCB) was found at levels above its health comparison value.

Table 1. Groundwater Results From On-Site Well, December 26, 1990.

Chemical	Sample ID	Concentration Range - ppm	Comparison Value	
			ppm	Source
Aroclor-1260 (PCB)	RK4231	0.0054	0.00018	EMEG
Chlorobenzene	RK4229	0.007	0.7	RfD
1,2-Dichloro-ethene (total)	RK4279	0.23	0.7	RfD

Data from reference #5.

Drums

Samples were taken from drums on December 26, 1990, and were analyzed for PCBs. Chemicals detected included Aroclor-1260 and Aroclor-1242. They were both found at concentration levels above their health comparison value.

Table 2. On-Site Drum Sample Results, December 26, 1990.

Chemical	Sample ID	Concentration Range -ppm	Comparison Value	
			ppm	Source
Aroclor-1260 (PCB)	RK4232	710	0.00018	EMEG
Aroclor-1242 (PCB)	RK4232	22	0.00018	EMEG

Data from reference #5.

Steel-Cased Hole

Samples were taken at different times of the day on March 4, 1992, from a hole located on the south edge of the site next to the Dugger Electric storage buildings (Figure 2). Sample results revealed high levels of PCBs and several hydrocarbons (Table 3). Due to the concentrations found in the hole and/or the lack of a health-based comparison value, the health effects of these chemicals will be discussed further in the TOXICOLOGICAL EVALUATION subsection.

Table 3. On-Site Surface Oil/Liquid Results, Steel-Cased Hole, March 4, 1991.

Chemical	Sample ID	Concentration Range - ppm	Comparison Value	
			ppm	Source
Aroclor-1260 (PCB)	RK4594 RK4595	720 740	0.00018	EMEG
Naphthalene	RK4594 RK4595	280 310	0.02	LHA
Acenaphthene	RK4594 RK4595	6,200 5,800	0.06	RfD
Fluorene	RK4594 RK4595	11,000 8,100	0.04	RfD
Phenanthrene	RK4594 RK4595	21,000 7,400	-	*
Anthracene	RK4594 RK4595	5,800 12,000	-	*
Fluoranthene	RK4594 RK4595	20,000 2,000	0.04	RfD
Pyrene	RK4594	6,300	-	*

* No health comparison value available
Data from reference #7.

Surface Soil

Several on-site surface soil samples were collected on May 31, 1990, from areas surrounding transformers (Figure 3). The samples revealed various levels of PCBs (Table 4). Two of the on-site samples (RK2979 & RK2988) showed PCBs above their comparison value. The health effects of PCBs at these concentrations will be discussed in the TOXICOLOGICAL EVALUATION subsection.

Table 4. On-Site Surface Soil Results, May 31, 1990.

Chemical	Sample ID	Concentration Range - ppm	Comparison Value	
			ppm	Source
Aroclor-1260 (PCB)	RK2979 (HS-11)	50	3.5	EMEG
	RK2980 (HS-12)	4		
	RK2981 (HS-13)	6		
	RK2982 (HS-14)	10		
	RK2983 (HS-15)	17		
	RK2984 (HS-21)	0.5		
	RK2986 (HS-23)	0.4		

Data from reference #8.

B. OFF-SITE CONTAMINATION

Groundwater - Monitoring Wells

On April 4, 1991, monitoring wells MW-4 through MW-7 were sampled (Figure 1). All the samples showed no detectable levels of PCBs (Table 5) except for the sample from MW-6 & 7 (Dugger City Park). On April 17, 1991, MW-3 was tested; the sample showed no detection of PCBs. On November 7, 1991, several monitoring wells located within the City of Dugger were sampled. Sample locations included areas south of Dugger Lake, Union High School, Dugger City Park, and major roads such as State Route 54. These samples were analyzed for PCBs. None of these samples showed a detectable concentration of PCBs and, therefore, are not listed below.

Table 5. Off-Site Monitoring Well Results, April 4, 1991.

Chemical	Sample ID	Concentration Range - ppm	Comparison Value	
			ppm	Source
Aroclor-1254 (PCB)	RK4762 (MW-6)	0.002	0.00018	EMEG
	RK4764 (MW-7)	0.0002		

Data from reference #2.

Surface Water

On October 24, 1990, two samples were taken from the north edge of the drainage ditch at the base of the drainage pipe, and at the drain (Table 6); no PCBs were found in either sample.

On May 31, 1990, two samples were taken from the open storm drain basin on the west side of the fenced property (Figure 4). PCBs were detected in both samples at 40 ppb (Table 6).

Eight surface water samples were collected on December 26, 1990, from the storm ditch. The storm ditch, which originates on the east side of the site, flows below and to the west side of the site into a larger ditch. No PCBs were detected.

Surface water samples were collected from May 31, 1990, to February 20, 1991. The samples collected from the ditch near the open drain on the west edge of the property revealed high concentrations of PCBs (440 ppb). The samples were collected along the inferred underground route of drainage. The detected concentration in the samples decreased the farther west the samples were collected. PCBs from sample locations SW-3, SW-4, SW-5, SW-6, HW-12, and duplicate sample HW-14 were found at levels of concern (Table 6). All other samples were below laboratory detection limits. The health effects of PCBs will be discussed in the TOXICOLOGICAL EVALUATION subsection.

Table 6. Off-Site Surface Water Results.

Chemical	Sample ID	Concentration Range-ppb	Comparison Value	
			ppb	Source
Aroclor-1260 (PCB)	**Open Storm Drain Basin (05/31/90)**			
	RK2974 (HW-12) RK2976 (HW-14, dup.)	40 40	0.18	EMEG
	Storm Drain Ditch (02/20/91)			
	RK4541 (SW-3) RK4540 (SW-4) RK4539 (SW-5) RK4538 (SW-6)	440 220 1 9	0.18	EMEG
Aroclor-1260 (PCB)	**Storm Drain Ditch (03/22/91)**			
	RK4699 (SW-3) RK4700 (SW-4) RK4701 (SW-5) RK4702 (SW-6) RK4703 (SW-7) RK4704 (SW-7, dup.)	0.35 23 2 .64 .44 .43	0.18	EMEG

Data from reference numbers 8, 9, and 11.

Sediment

On October 24, 1990, sediment samples were collected on the south side of the bank near the hay bales. The samples from the creek showed concentrations of Aroclor-1260, above its health comparison value (Table 7).

Table 7. Off-Site Sediment Results, Site Creek Bed, October 24, 1990.

Chemical	Sample ID	Concentration Range - ppm	Comparison Value	
			ppm	Source
Aroclor-1260 (PCB)	RK3698 RK3699	6.1 5.8	3.5	EMEG

Data from reference #6.

Surface Soil

Seven surface soil samples were analyzed on October 24, 1990, for semi-volatile organic compounds (SVOCs) and PCBs. Samples were collected on the west side of the property at the edge of the chain-link fence, approximately 20 feet from the stop sign and power line at the corner of Main and Second Streets (Figure 5). PCBs were found at levels above their health comparison values in sample number RK3697, Site 2 (Table 8).

Several surface soil samples were collected from the storm ditch area at a depth of 1-6 inches on December 26, 1990. Surface soil samples revealed the following polycyclic aromatic hydrocarbons (PAHs): benzo(b)fluoranthene, pyrene, and phenanthrene. On February 20, 1991, surface soil samples collected from the same storm ditch area revealed PCBs were concentrating at the hay bales and not migrating downstream. On March 22, 1991, samples of the locations revealed low levels of PCBs in the storm ditch. Health comparison values have not been determined for the PAHs; therefore, they are chemicals of concern.

Table 8. Off-Site Surface Soil Results.

Chemical	Sample ID	Sample Date	Concentration Range-ppm	Comparison Value	
				ppm	Source
Storm Drain Ditch					
Aroclor-1242 (PCB)	RK3696 (Site 1)	10/24/90	2.1	3.5	EMEG
Aroclor-1260 (PCB)	RK2992 (GRS-1)	05/31/90	0.1	3.5	EMEG
	RK4540 (Site-4)	02/20/91	0.34		
	RK4539 (Site-5)		2.7		
	RK4538 (Site-6)		1.1		
	RK4699 (SS-3)	03/22/91	0.36		
	RK4700 (SS-4)		1.0		
	RK4701 (SS-5)		3.4		
	RK4702 (SS-6)		1.0		
	RK3697 (Site 2)	10/24/90	4.7		
	RK3696 (Site 1)		0.88		
Benzo(b)fluoranthene	RK4227 (SS-2)	12/26/90	330	-	*
	RK4225 (SS-3)		430		
	RK4221 (SS-7)		400		
Fluoranthene	RK4221 (SS-7)	12/26/90	820		
	RK4225 (SS-3)		430		
Pyrene	RK4227 (SS-2)	12/26/90	360	-	*
	RK4225 (SS-3)		430		
	RK4221 (SS-7)		590		
Phenanthrene	RK4225 (SS-3)	12/26/90	360	-	*
PSI Transformer Storage Area					
Aroclor-1260 (PCB)	RK2991 (PS-14)	05/31/90	0.2	3.5	EMEG

* No health comparison value available
Data from reference numbers 5, 6, 8, 9, & 11.

Fish Sampling

In May 1990, fish samples of the Bluegill, Warmouth, White Crappie, and Large Mouth Bass species were collected by IDEM from the east basin of Dugger Lake. Sample results showed several fish with low levels of PCBs. The ISDH currently uses FDA guidelines for the development of their fish consumption advisories. Although PCBs were detected, they were not at concentrations high enough to warrant a fish consumption advisory.

No fish tissue data were available, however, for either Catfish or Carp. Due to their predatory nature and being bottom feeders, these two species were deemed to be the most likely to be contaminated. Since no data on these species were available, a Group 2 fish consumption advisory (limit consumption to no more than one meal per week, and women and children should not consume) was issued until data either supporting or refuting the advisory could be developed.

C. QUALITY ASSURANCE AND QUALITY CONTROL

In preparing this health assessment, the ISDH relies on the information provided in the referenced documents. Adequate quality assurance and quality control measures were followed with regard to chain-of-custody, laboratory procedures, and data reporting. The validity of the analysis and conclusions drawn for this Health Assessment are determined to be complete and comprehensive.

D. PHYSICAL AND OTHER HAZARDS

As discussed in the SITE VISIT subsection, each parcel of land on-site is fenced. Warning labels of "High Voltage" can be seen on each fence. The steel-cased hole on the property is covered by a single metal sheet/plate that is easily moved. A drainage ditch opening on the west side of the site is uncovered.

PATHWAY ANALYSES

An exposure pathway is considered complete only if all of the following elements are present: 1) source of contamination, 2) environmental media and transport, 3) point of exposure, 4) route of exposure, and 5) receptor population. As discussed in the ENVIRONMENTAL CONTAMINATION AND OTHER HAZARDS section, the on-site steel-cased hole, surface soil, and off-site drainage ditch are contaminated with PCBs. Exposure pathways related to these contaminants and media are discussed below.

A. COMPLETED EXPOSURE PATHWAYS

On-site Surface Soil

The on-site surface soil is contaminated with PCBs at levels of concern. Several transformers and drums located on-site have been removed. Approximately 600 used transformers, some of which appear to have leaked, or are leaking oil, are scattered across the surface of the site. Although it is unlikely that individuals who work on-site may ingest, inhale, or have direct contact with the contaminated surface soil/dust, on-site workers should take precautions to minimize dermal contact with contaminated soils.

Off-Site Surface Water

The contaminated surface water of the drainage ditch flows from Dugger Electric through a residential area. There is a potential for individuals and children in the area to ingest or have dermal contact with this water during recreational activities. The surface water flows through the storm drain under the site into the drainage ditch.

Because the drainage ditch connects from the site to Dugger Lake, suspended sediments containing PCBs could flow with the water in the ditch and eventually discharge into the lake. Preliminary analytical test results reveal the surface water and sediment from the ditch are contaminated with PCBs. The extent of the contamination in the lake is not known.

Table 9. Completed Exposure Pathways

PATHWAY NAME	EXPOSURE PATHWAY ELEMENTS					TIME
	SOURCE	ENVIRONMENTAL MEDIA	POINT OF EXPOSURE	ROUTE OF EXPOSURE	EXPOSED POPULATION	
On-site Surface Soil	Dugger Electric	Soil	Site	Ingestion, Dermal contact, Inhalation	On-site workers	Past Present Future
Off-site Surface Water	Dugger Electric	Surface Water	Open drainage ditch, Dugger Lake	Incidental Ingestion, Direct contact Ingestion, Inhalation	Neighborhood residents	Past Present Future Present

B. POTENTIAL EXPOSURE PATHWAYS

Off-site Groundwater

Most of the City of Dugger lies above abandoned underground coal mines. We do not know how many Dugger residents use private wells for drinking, showering, or other domestic purposes. The public water supply for Dugger, however, is purchased from Linton, Indiana. During the first sampling of monitoring wells in April 1991, PCB concentrations between 0.1 and 0.2 ppb were detected in three groundwater samples. During the second sampling of the previous monitoring wells near the site, and several holes in the vicinity of Dugger, no PCBs were detected.

IDEM is currently determining the water table levels from the previous seven monitoring wells that were installed during the first sampling in April 1992. Even though PCBs were not detected in the last sampling of the monitoring wells, there is a potential for residents with private wells to ingest or be exposed to PCBs through domestic use of water in the future if the groundwater becomes contaminated. There is inadequate data regarding the sampling for PCBs and other contaminants of private wells. Since the direction of the groundwater flow and the extent of any groundwater contamination is unknown, these areas, as well as the affect of any mine de-watering activity which might result in a shift of the groundwater flow direction, should be investigated.

Fish Pathway

There is the possibility of a past, present, and future completed exposure pathway for all individuals eating certain fish species found in Dugger Lake. Fish in this lake absorb PCBs either directly by ingesting contaminated water and sediment, or indirectly by consuming other fish that have absorbed this chemical. Carp are plant-eating fish. Catfish eat dead fish, scavenge the bottom of lakes, and continually disturb bottom sediments. A limited fish advisory has been issued on Dugger Lake due to the lack of tissue sampling data in Carp and Catfish. Until this sampling is done, these two fish species remain the only completed fish exposure pathways for Dugger Lake.

Table 10. Potential Exposure Pathways

PATHWAY NAME	EXPOSURE PATHWAY ELEMENTS					TIME
	SOURCE	ENVIRONMENTAL MEDIA	POINT OF EXPOSURE	ROUTE OF EXPOSURE	EXPOSED POPULATION	
Off-site ground-water	Dugger Electric	Groundwater	Private wells	Ingestion, Dermal contact, Inhalation (showering)	Individuals who use private wells for domestic purposes	Future
Fish	Dugger Electric	Fish	Dugger Lake	Ingestion	Neighborhood residents	Past Present Future

State Form 43207 (2-89)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

2301E

INDIANAPOLIS

OFFICE MEMORANDUM

DATE: JUNE 25,1990

TO: John L. Winters

THRU: C. Lee Bridges

FROM: James R. Stahl

SUBJECT: Subject:"Dugger Lake" fish and sediment contamination investigation

On April 27, 1990 Biological Studies staff and OER staff, Marlene Mathas, visited a strip pit lake (locally known as "Dugger Lake") and drainage ditch located just west of the town of Dugger in Sullivan County to collect surface water and surficial sediment samples (see attached map). Biological Studies staff were there primarily to survey the area for access to collect fish tissue samples from the lake's east basin. All samples were to be analyzed for PCBs (see OER Report on Dugger Electric Equipment Co., Dugger, IN, March 1990).

"Dugger Lake" consists of two distinct basins. The "east" is approximately 2 acres and the "west" is approximately 52 acres. The two basins are connected by a culvert that passes underneath a road that separates the two. The west basin consists of two long fingers that extend to the north and to the south. Mr. Dane Strahle, a homeowner along the east basin shore boasted of an excellent crappie as well as other game fish fishery. Both basins are sport fished.

Both surface water and sediment samples were collected from the following locations on 4/27/90 (see attached map):

1. midway down a ditch coming from the Dugger Electric Equipment Co and the east basin. (sediment grab and surface water grab)
2. the eastern half of the east basin (three grabs in cross section for a composite sediment sample and surface water grab)
3. 200 meters off of the connecting culvert inlet into the west basin. (again the sediment sample was a composite of three ponar grabs plus a surface water grab).

Field duplicate samples were taken of the ditch sediments and of the east basin surface water. Both surface water and sediment samples were analyzed by National Environmental Testing Laboratories, Indianapolis.

On 5/2/90 staff returned to "Dugger Lake" to collect fish samples from the east basin for tissue contaminant analysis. An electrofishing boat was used. Samples submitted to the ISBH Consumer Health Lab (CHL) were:

1. Bluegill (whole)
2. Warmouth (whole)
3. White Crappie (skin-on fillets, scaleless)
4. Largemouth Bass (skin-on fillets, scaleless)
5. Bluegill (skin-on fillets, scaleless)

Unfortunately no bottom feeders such as carp or catfish could be collected as this is a very steep banked, deep basin with very good water clarity. Electrofishing is not a good method for collecting these species out of deep waters.

Analytical results of surface water grab samples collected from "Dugger Lake" showed less than detectable amounts of PCBs in either basin or the drainage ditch (Table 1). This was not unexpected as PCB oils have a very low solubility. Because of the low solubility, high octanol-water-partition coefficient and strong adsorption of PCBs to soils and sediments, significant leaching should not occur from sediment to water. Detectable levels of PCBs in water would therefore only be an indication of recent contamination to the aquatic environment. The water quality standards for PCB in Indiana waters outside of the mixing zone for human health is 0.00079ug/l (risk level 10^{-5}). The Chronic Aquatic Criterion for aquatic life (4-day average) is 0.014ug/l. The laboratory's detection limit was 1.0 ug/l for each of the seven PCB mixtures.

In the aquatic environment PCB adsorption to sediments or other organic matter is a major fate process. PCBs in surficial sediments from both "Dugger Lake" east basin and the drainage ditch to the lake were detected in low concentrations as aroclor-1254 (Table 2.). However due to QA/QC problems in reporting the water and sediment results these values may be unreliable even though documentation shows the definite presence of PCB aroclor-1254 (see OFFICE MEMORANDUM 6/19/90 from Richard Radcliff to Monique Hinterberger and Jim Stahl). Results of PCB analysis on sediments from the west basin were below the laboratory detection limits. Method detection limits (0.3 ug/g) set for this analyzing laboratory were much higher than those normally used by this office for ambient sediment monitoring (0.01-0.05 ug/g).

Indiana State Board of Health CHL fish tissue results are shown in Table 3. None of the 5 samples collected 5/2/90 exceeded the USFDA action level of 2.0 ppm total PCB on an edible portion basis. The Office of Emergency Response recently submitted a whole channel catfish, whole black bullhead and another whole bluegill sample (6/1/90) to the ISBH-CHL. These had been caught by Mr. Strahle subsequent to the Biological Studies Section's collection. John Kassis (OER) should be contacted for these results. Further information as to the status of monitoring or actions against Dugger Electric Equipment Co. should be referred to Marlene Mathas, now with OSWM.

Attachments

cc John Kassis (OER)
Marlene Mathas (OSWM)
Syed GhiasUddin (OWM)
Don Fitzpatrick (External Affairs)

TABLE 1. RESULTS OF SURFACE WATER ANALYSIS FOR PCBs IN "DUGGER LAKE", 4/27/90, SULLIVAN COUNTY, INDIANA.

Surface Waters (ug/l)

OLS SAMPLE #	BLANK DK4336	EAST BASIN DK4337 (DK4338)	WEST BASIN DK4343	DITCH TO DUGGER LAKE DK4339
AROCLOR				
PCB-1016	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1221	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1232	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1242	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1248	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1254	<1.0	<1.0 (<1.0)	<1.0	<1.0
PCB-1260	<1.0	<1.0 (<1.0)	<1.0	<1.0
DIBUTYLCHLORENDATE SURROGATE RECOVERY(%)	115	105 (104)	103	96

()=FIELD DUPLICATE SAMPLE RESULTS

TABLE 2. RESULT OF SURFICIAL SEDIMENTS ANALYSIS FOR PCBs IN "DUGGER LAKE", 4/27/90, SULLIVAN COUNTY, INDIANA.

(UG/G WET WEIGHT)

OLS SAMPLE #	DITCH TO "DUGGER LAKE" DK4340 (DK4341)	EAST BASIN DK4342	WEST BASIN DK4344
AROCLOR			
PCB-1016	<0.3 (<0.3)	<0.3	<0.3
PCB-1221	<0.3 (<0.3)	<0.3	<0.3
PCB-1232	<0.3 (<0.3)	<0.3	<0.3
PCB-1242	<0.3 (<0.3)	<0.3	<0.3
PCB-1248	<0.3 (<0.3)	<0.3	<0.3
PCB-1254	0.3 (<0.3)	0.8	<0.3
PCB-1260	<0.3	<0.3	<0.3
%MOISTURE	63 (64)	42	34
TOTAL ORGANIC CARBON	54 (39)	21	20
SURROGATE RECOVERY Dibutylchlorendate	25 (24)	136	128

()=Laboratory Duplicate

TABLE 3. SAMPLE DESCRIPTION DATA AND ANALYTICAL RESULTS (ISBH-CHL) FOR FISH SAMPLES COLLECTED FROM "DUGGER LAKE" EAST BASIN, SULLIVAN COUNTY, INDIANA CO ON 5/2/90. RESULTS ARE REPORTED ON A WHOLE FISH BASIS (PPM).

	WHOLE BLUEGILL	WHOLE WARMOUTH	WHITE CRAPPIE SK-ON FILLETS	LARGEMOUTH BASS SK-ON FILLETS	BLUEGILL SK-ON FIL.
LAB SAMPLE #	701	702	703	704	705
TOTAL PCBs	1.49 (1.27)	0.837	0.155	0.197 (0.154)	0.211
%FAT	5.46 (5.22)	1.870	0.333	0.273 (0.254)	0.798
AVGERAGE WEIGHT(GM)	108	71	363	445	207
RANGE	34-168	18-105	290-416	336-692.	158-278
AVGERAGE LENGTH(CM)	17.1	14.0	30.2	32.9	20.7
RANGE	14.2-19.6	9.2-16.8	27.8-31.1	30.6-37.0	18.9-22.6

()=LABORATORY DUPLICATE

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

DATE: June 28, 1990

TO: Rod Thompson, Chief
State Cleanup Section

THRU: Robert L. Moran RLM 6/28
Skip Powers 6/28
Jackie Strecker 6/28/90
Corinne Wellish 6/29/90

FROM: John Kassis JK. 6/27/90
Emergency Response

SUBJECT: Dugger Electric Company
PCB Contamination
Incident No. 9003157

Emergency Response staff has identified the Dugger Electric Company site as a potential cleanup site for the State Cleanup Section of the Office of Environmental Response. Samples taken by Emergency Response, Office of Solid and Hazardous Waste Management and the Biological Studies Section of the Office of Water Management (see Attachment 1) have confirmed the presence of PCB contamination both on the Dugger Electric Company Site #1 and off-site in drainage ditch samples as well as lake sediment samples and fish tissue samples taken from Dugger Lake one mile downstream.

A temporary fish consumption advisory was issued on April 27, 1990, by the Indiana State Board of Health (ISBH) after preliminary sampling results were reviewed by IDEM (see Attachment 2). The advisory was then partially removed on May 21, 1990, when fish tissue sample analyses indicated that the U.S. FDA target warning level of 2.0 ppm PCB in the "whole fish" sample was not achieved (see Attachment 2).

On May 31, 1990, Emergency Response staff again sampled the Dugger Electric Company Site #1 and a second transformer storage location Dugger Electric Site #2 (see Attachment 3) and a Public Service of Indiana (PSI) temporary transformer storage site. The PSI storage of transformers occurred the winter of 1989 during an upgrade of the electrical voltage system in Dugger, Indiana (see Attachment 4). Again, PCB contamination was confirmed to be on Dugger Electric Company Site #1 and running off-site of Dugger Electric Site #1. No PCB contamination was confirmed on Dugger Electric Site #2 or the PSI Site. During the May 31, 1990 sampling, split samples were given to Mr. Hunley per request of Mr. Hunley, owner of Dugger Electric Company.

Staff also collected two sets of fish samples caught by residents on Dugger Lake on May 31, 1990. The fish represented the catfish population (bottom feeders) and another blue gill population sample. The results from these samples should be available through the ISBH Consumer Health Laboratory by July 17, 1990. The contact person for the advisory is Gregory Steele 317/633-8554 (see Attachment 5).

Although an environmental emergency does not exist at this time, priority status should be given to this case until the investigation proves/disproves the source. All scientific data indicates that further in-depth investigation for a remedial cleanup should be addressed.

The key points to address are the mechanism in which the oil is infiltrating the storm sewer system beneath Dugger Electric Site #1 and the historical disposal of the accumulated dielectric oil from Dugger Electric Company during its operation.

No further action is anticipated by this office.

FOR IMMEDIATE RELEASE

BRIDGES
Rcd 6/25/90
from G.S.

Public Health NEWS

ISBH

INDIANA STATE BOARD OF HEALTH

May 21, 1990

For Additional Information Call
Mary Ann Cox, 317-633-0852

GREEN LIGHT GIVEN FOR CONSUMPTION OF MOST DUGGER LAKE FISH

A temporary advisory against eating fish taken from Dugger Lake in Sullivan County was partially lifted today by state health, environmental and natural resource officials. The cautionary measure was revised after the Indiana State Board of Health completed tests on fish samples taken from the lake earlier this month by the Indiana Department of Environmental Management.

The temporary advisory was issued April 27 after an IDEM review of soil and water sample results indicated that PCBs, or polychlorinated biphenyls, were present in a tributary of the lake.

"We're pleased with the results of the sampling," noted Greg Steele, an environmental epidemiologist with the ISBH. "Fisherman can resume eating the majority of their catch from Dugger Lake. We're issuing a Group 2, or limited advisory for carp and catfish from Dugger Lake because they are bottom feeders and PCBs settle to river and lake bottoms. In addition, due to the depth of the lake, IDEM was unable to sample fish residing on the bottom. It's just a precaution to protect public health."

A Group 2 advisory means that women of child bearing age and children under the age of 15 should not consume any of the designated species. All other fish in Dugger Lake have received a Group 1 rating, which means no consumption advisory is in effect.

PCBs are a group of 209 compounds found in old transformers and capacitors. The effects of chronic, long-term ingestion of PCBs are still under investigation.

State health officials suggest Hoosiers follow safe-cooking practices when preparing freshly-caught fish to further reduce any risk associated with the consumption of eating contaminated fish. Safe-cooking calls for preparing fish as skinless fillets, trimming all fat and backing or broiling the fish so the fat can drip off while cooking. Preparing and cooking fish in this manner can reduce the amount of contamination by nearly 50 percent. These tips are highlighted in the brochure "Preparing and Eating Fish Caught in Indiana Waters," which is available upon request from the Indiana Department of Environmental Management, the Indiana State Board of Health and the Indiana Department of Natural Resources.

-30-

SECTION VI

REFERENCES

- EPA Potential Hazardous Waste Site Preliminary Assessment Form, EPA Form 2070-12 for the Dugger Electric site, Dugger, Indiana

- EPA Potential Hazardous Waste Site Inspection Form 2070-13 for the Dugger Electric site, Dugger, Indiana.

- Indiana Department of Environmental Management Files, Part 3B.

- Geology Assessment, Mr. Billy Giles, CPG, Indiana Department of Environmental Management.

- Indiana Department of Natural Resources, Water Well Logs.

- Marlene Mathis, Telephone Conversation, Indiana Department of Environmental Management.

- Mr. Robert Hunley, Personal Conversation, Owner of Dugger Electric.

- Mr. Cloyce Hedge, Telephone Conversation, Indiana Department of Natural Resources.

APPENDIX A

SITE 4 - MILE RADIUS MAP

317 Houses
817 People

325 Houses
838 People

226 Houses
583 People

141 Houses
363 People

Assume 559 People
½ Population

¼ Mile

½ Mile

1 Mile

2 Miles

3 Miles

Four (4) Mile Radius Map of the
Dugger Electric Site

Estimated Population Between
Radius Circles Shown Within
the Radius Circles

Approximate Location of Private
Groundwater Wells Are Indicated by ●
Note that even though several wells
exist, private wells are not shown
in the town of Dugger.

Scale 1 inch = 2000 feet

● Indicates the location of a groundwater well that was used for determining the Geologic Assessment (Appendix E). The number at the well location corresponds to the well log number (of that groundwater well) found in Appendix G.

APPENDIX B

U.S. EPA FORM 2070-13

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IND	984894808

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Dugger Electric	Main Street				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Dugger	IN	47848	Sullivan	153	08

09 COORDINATES		10 TYPE OF OWNERSHIP (Check one)
LATITUDE	LONGITUDE	☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
39° 04' 00"	87° 15' 25"	☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION		
7/30/91 (MONTH DAY YEAR)	☒ ACTIVE ☐ INACTIVE	early 1920's (BEGINNING YEAR)	Present (ENDING YEAR)	___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☒ E. STATE ☐ F. STATE CONTRACTOR IDEM (Name of firm) ☐ G. OTHER _____ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Mark Jaworski	Environmental Scientist	IDEM	(317) 232-8931
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Pat Austin	Chemist	IDEM	(317) 232-8874
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Robert Hunley	owner/operator	128 Monroe Street	(812) 648-2244 (812) 648-2445
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	4:30 pm	sunny, mid 80's, humid

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Harry E. Atkinson	IDEM/OER	(317) 232-8928

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Mark Jaworski	IDEM	OER	317/232-8931	10/09/91 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IND	984894808

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES *(Check all that apply)*

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ *(Specify)*
- ☐ E. SLURRY
- ☒ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

- TONS _____
- CUBIC YARDS _____
- NO. OF DRUMS 4789

03 WASTE CHARACTERISTICS *(Check all that apply)*

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS	unknown	N/A	
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES *(See Appendix for most frequently cited CAS Numbers)*

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
OCC	PCB (Arochlor 1260)	11096-82-5	well injection	940	mg/l

V. FEEDSTOCKS *(See Appendix for CAS Numbers)*

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

IDEM Files (Part 3B)
SSI Sampling Results

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IND	984894808

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Robert Hunley		128 Monroe Street		Dugger	IN	47848

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Bill Hunley		(Mr. Robert Hunley's Father)				
Mr. Ohm		Deceased				

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

IDEM FIles (Part 3B)
Personal conversation with Marlene Mathis (IDEM-State Cleanup)
Personal conversation with Mr. Robert Hunley (Owner)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IND	984894808

II. CURRENT OPERATOR *(Provide if different from owner)*

01 NAME	02 D+B NUMBER
Robert Hunley	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
128 Monroe Street	

05 CITY	06 STATE	07 ZIP CODE
Dugger	IN	47848

06 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY *(If applicable)*

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) *(List most recent first; provide only if different from owner)*

01 NAME	02 D+B NUMBER
Bill Hunley	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
(Mr..Robert Hunley's Father)	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES *(If applicable)*

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER
Mr. Ohm	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
Deceased	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

IDEM Files (Part 3B)
Personal conversation with Marlene Mathis (IDEM-State Cleanup)
Personal conversation with Mr. Robert Hunley (Owner)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
IND	984894808

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
Robert Hunley	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
128 Monroe Street	

05 CITY	06 STATE	07 ZIP CODE
Dugger	IN	47848

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

IDEM Files (Part 3B)
Personal conversation with Marlene Mathis (IDEM-State Cleanup)
Personal conversation with Mr. Robert Hunley (Owner)

APPENDIX C

SITE PHOTOGRAPHS

PHOTOGRAPHY LOG SHEET

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 6:45 AM

DIRECTION

WEATHER LOW 80'S, CLEAR

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

S 7B

DESCRIPTION: OIL OBTAINED FROM AN ON SITE CASED WELL.

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 6:45 AM

DIRECTION

WEATHER LOW 80'S, CLEAR

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

S 7B

DESCRIPTION: CONSULTANTS OBTAINING OIL FROM ON SITE CASED WELL

PHOTOGRAPHY LOG SHEET

SITE Dugger ELECTRIC

DATE 6:45 AM 7-25-91

TIME 6:45 AM

DIRECTION

WEATHER Low 80's, CLEAR

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

S713

DESCRIPTION: OIL OBTAINED FROM ONSITE CASED WELL, OIL BEING DISPOSED INTO DRUMS

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 10:50 AM / 11:00 AM

DIRECTION

WEATHER MID 80'S, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

114 / S715

DESCRIPTION: GROUND WATER SAMPLE OBTAINED FROM MONITORING WELL #2 LOCATED SOUTH WEST OF DUGGER ELECTRIC SITE

PHOTOGRAPHY LOG SHEET

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 11:40 AM

DIRECTION

WEATHER Mid 80's, CLEAR

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

S716

DESCRIPTION: GROUNDWATER WELL SAMPLE OBTAINED FROM LOYD PIRTLE PROPERTY ADJACENT TO DUGGER ELECTRIC

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 12:30 PM

DIRECTION

WEATHER Mid 80's, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

717

DESCRIPTION: RESIDENTIAL GROUNDWATER WELL SAMPLE OBTAINED FROM DAVID DAVIES PROPERTY

PHOTOGRAPHY LOG SHEET

SITE Dugger Electric

DATE 7-24-91

TIME 4:00 PM

DIRECTION

WEATHER Mid 80's, clear

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

S722

DESCRIPTION: Sediment sample obtained in Dugger Ditch, less than 200 feet from residential homes, 450 feet west of Dugger Electric (refer to map E)

SITE Dugger Electric

DATE 7-24-91

TIME 4:25 PM

DIRECTION

WEATHER Mid 80's, clear

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

723

DESCRIPTION: Sediment sample obtained in Dugger Ditch, ≈400 feet west of sample S722 (30 feet west of Poplar Street.)

PHOTOGRAPHY LOG SHEET Page _____

SITE Dugger ELECTRIC

DATE 7-24-91

TIME 4:54 PM

DIRECTION _____

WEATHER 80's, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

S724

DESCRIPTION: SEDIMENT SAMPLE OBTAINED IN DUGGER DITCH AT A LOCATION APPROXIMATELY 125 FEET NORTH OF MASON ST.

SITE Dugger ELECTRIC

DATE 7-24-91

TIME 6:45 PM

DIRECTION _____

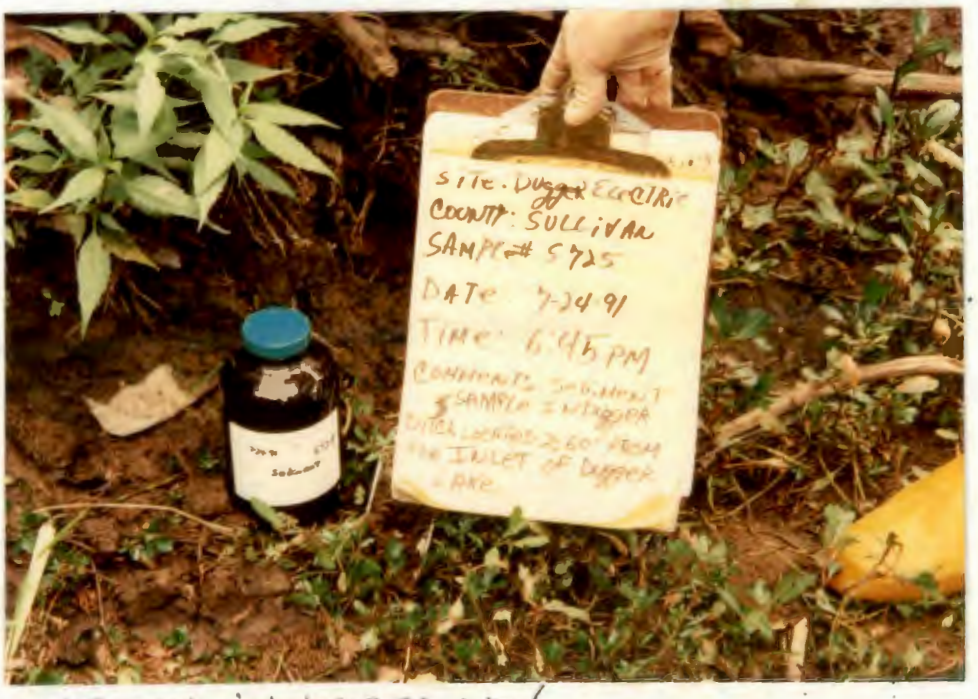
WEATHER 80's, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

S725



DESCRIPTION: SEDIMENT SAMPLE OBTAINED IN DUGGER DITCH LOCATED ≈60 FEET FROM THE DITCH INLET INTO DUGGER LAKE

PHOTOGRAPHY LOG SHEET

SITE Dugger Electric

DATE 7-24-91

TIME 7:00 PM

DIRECTION _____

WEATHER 80's, clear

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

S726

DESCRIPTION: Sediment sample obtained in the southern most tributary to Dugger Ditch; ±150 feet from the confluence

SITE Dugger Electric

DATE 7-25-91

TIME 7:45 AM

DIRECTION _____

WEATHER High 70's to ~~mid~~ 80's

clear

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

727

DESCRIPTION: Duplicate of S728

PHOTOGRAPHY LOG SHEET

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 7:40 AM

DIRECTION _____

WEATHER ≈80, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

S728

DESCRIPTION: Soil SAMPLE OBTAINED ONSITE ≈15 feet EAST OF WEST FENCE LINE; ≈75 Feet SOUTH OF NORTH FENCE LINE BETWEEN TRANSFORMERS.

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 7:55AM

DIRECTION _____

WEATHER CLEAR, 80's

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

29

DESCRIPTION: ONSITE SOIL SAMPLE, ≈45' WEST OF EAST FENCE LINE, ≈160 FEET S. of NORTH FENCE LINE, NEXT TO TRANSFORMER #8047473

PHOTOGRAPHY LOG SHEET

Page _____

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 8:25AM

DIRECTION _____

WEATHER 80's, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

S730

DESCRIPTION: ON SITE SOIL SAMPLE, 4 FEET EAST OF WEST FENCE LINE, ~~AT~~ NORTH OF WEST FENCE GATE AT THE FIRST SET OF TRANSFORMERS.

SITE Dugger ELECTRIC

DATE 7-25-91

TIME 8:45AM

DIRECTION _____

WEATHER Low 80's, CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

731

DESCRIPTION: SEDIMENT SAMPLE OBTAINED IN DOGGER DITCH AT THE CULVERT OUTFALL IN THE FENCED AREA JUST WEST OF 1ST. STREET

PHOTOGRAPHY LOG SHEET

Page _____

SITE Dugger Electric

DATE 7-25-91

TIME 9:30 AM

DIRECTION _____

WEATHER 80's, clear

PHOTOGRAPHED BY:

Pat Austin

SAMPLE ID # (IF APPLICABLE)

S732

DESCRIPTION: Background sediment sample obtained from the northern most tributary of Dugger Pitch North of samples S722, West of Pizarest.

SITE Dugger Electric

DATE 7-25-91

TIME 10:00 AM

DIRECTION _____

WEATHER 80's, clear

PHOTOGRAPHED BY:

Pat Austin

SAMPLE ID # (IF APPLICABLE)

133

DESCRIPTION: Background soil sample obtained in Dugger Park West to Northwest of Dugger Electric.

PHOTOGRAPHY LOG SHEET

Page _____

SITE Dugger Electric

DATE 7-25-91

TIME 9:30 AM

DIRECTION _____

WEATHER 80's, clear

PHOTOGRAPHED BY:

MARK JAWORSKI

SAMPLE ID # (IF APPLICABLE)

DESCRIPTION: DUPLICATE of S732

SITE Dugger Electric

DATE 7-25-91

TIME 10:30

DIRECTION _____

WEATHER 80's, clear-partly cloudy

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

'A

DESCRIPTION: Looking east into Dugger Electric facility at the west fence gate

PHOTOGRAPHY LOG SHEET

Page _____

SITE Dugger Electric

DATE 7-25-91

TIME 10:30 AM

DIRECTION _____

WEATHER 80's, PARTLY CLOUDY-CLEAR

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

NA

DESCRIPTION: Looking EAST into the Dugger Electric Facility at a Point slightly North of west Fence gate

SITE Dugger Electric

DATE 7-25-91

TIME 10:30 AM

DIRECTION _____

WEATHER 80's, Clear-Partly Cloudy

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

1A

DESCRIPTION: Northwest Sector of the Dugger Electric Facility

PHOTOGRAPHY LOG SHEET

Page _____

SITE Dugger Electric

DATE 7-25-91

TIME 10:30 AM

DIRECTION _____

WEATHER Clear - Partly Cloudy 80's

PHOTOGRAPHED BY:

PAT AUSTIN

SAMPLE ID # (IF APPLICABLE)

No

DESCRIPTION: NW Sector of Dugger Electric

SITE _____

DATE _____

TIME _____

DIRECTION _____

WEATHER _____

_____

PHOTOGRAPHED BY:

_____

SAMPLE ID # (IF APPLICABLE)

_____

DESCRIPTION: _____

_____

APPENDIX D

CHEMICAL ANALYSIS DATA

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234844
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 13:00

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - WATER
S712

GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: R. KOBZA Analysis Date: 30-JUL-91 Test: P930.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

ARSENIC GFAA (CLP) ILM01

Analyst: M. BAUER Analysis Date: 30-JUL-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 01-AUG-91 Instrument: GFAA Test: M916.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.003	mg/L

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 05-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 30-JUL-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.0050	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: K. HACK Analysis Date: 29-JUL-91 Test: P931.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 30-JUL-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: B. HAHN Analysis Date: 07-AUG-91 Test: P930.4. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

BARIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	BDL	0.010	mg/L

CADMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CHROMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IROMIUM	BDL	0.010	mg/L

NICKEL ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	0.012	0.010	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

ALUMINUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	BDL	0.050	mg/L

ANTIMONY ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BERYLLIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0050	mg/L

COBALT ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	0.024	0.020	mg/L

prep blank was 0.036 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	0.032	0.020	mg/L

prep blank was 0.041 mg/l

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	BDL	0.20	mg/L

IRON ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	BDL	0.020	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	BDL	0.20	mg/L

MANGANESE ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	0.010	mg/L

POTASSIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	BDL	0.20	mg/L

SODIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	BDL	0.20	mg/L

LITHIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	BDL	0.010	mg/L

MOLYBDENUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	0.010	mg/L

STRONTIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	BDL	0.010	mg/L

TIN ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	0.050	mg/L

TITANIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.010	mg/L

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510
Analyst: R. MCKAIN Analysis Date: 29-JUL-91 Test: P230.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1050		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L
PCB AROCHLOR 1262	BDL	0.0001	mg/L

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 02-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
ıLOROMETHANE	BDL	10	ug/L
[BROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
"INYL CHLORIDE	BDL	10	ug/L
ſLENE (TOTAL)	BDL	5	ug/L
2-CHLOROETHYLVINYLETHER	BDL	10	ug/L
DIETHYLETHER	BDL	5	ug/L
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	5	ug/L

EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234844**

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	5	ug/L
METHYL-T-BUTYL ETHER	BDL	5	ug/L
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	95		% Rec
BROMOFLUOROBENZENE	97		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY			
CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G A Busk

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234843
	Complete 22-AUG-91	PO Number 70D
	Printed 03-SEP-91	Sampled 25-JUL-91 06:45

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA
IDEM CONTROL NO.: S713

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: J. WARE Analysis Date: 12-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA SW846-7471

Analyst: K. HACK Analysis Date: 14-AUG-91 Instrument: CVAA Test: M120.2. 0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Analyst: S. STRUEWING Analysis Date: 29-JUL-91 Test: P930.0. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	2		Grams
FINAL WEIGHT OR VOLUME	100		mL

ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Analyst: S. STRUEWING Analysis Date: 12-AUG-91 Test: P930.0. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	2		Grams
FINAL WEIGHT OR VOLUME	100		mL

ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Analyst: S. STRUEWING Analysis Date: 12-AUG-91 Test: P930.0. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	2		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 31-JUL-91 Instrument: GFAA Test: M903.2. 0

Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
SENIC	BDL	0.25	mg/kg

SELENIUM GFAA (CLP) ILM01
Analyst: K. KEHOE Analysis Date: 31-JUL-91 Instrument: GFAA Test: M928.2. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.25	mg/kg

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 06-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.25	mg/kg

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	10.	0.50	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.25	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.50	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	11.	2.5	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	1.7	0.50	mg/kg

prep blank was 0.022 mg/l

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.50	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	3.0	2.5	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	1.5	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.25	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.50	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	2.5	1.0	mg/kg

prep blank was 0.025 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.50	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	6.6	1.0	mg/kg

prep blank was 0.031 mg/l

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	30.	10.	mg/kg

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	7.9	1.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	BDL	10.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	0.50	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	BDL	10.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	31.	10.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	BDL	0.50	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	0.50	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	BDL	0.50	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 19-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	2.5	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: ACID DIGESTION OF OILS/SOLVENTS (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.50	mg/kg

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 02-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

Parameter	Result	Det. Limit	Units
:ETONE	BDL	12	mg/kg
ACROLEIN	BDL	31	mg/kg
ACRYLONITRILE	BDL	43	mg/kg
BENZENE	5.5	3.1	mg/kg
BROMODICHLOROMETHANE	BDL	3.1	mg/kg
BROMOFORM	BDL	3.1	mg/kg
BROMOMETHANE	BDL	6.3	mg/kg
CARBON DISULFIDE	BDL	3.1	mg/kg
CARBON TETRACHLORIDE	BDL	3.1	mg/kg
CHLOROBENZENE	BDL	3.1	mg/kg
CHLOROETHANE	BDL	6.3	mg/kg
CHLOROFORM	BDL	3.1	mg/kg
CHLOROMETHANE	BDL	6.3	mg/kg
DIBROMOCHLOROMETHANE	BDL	3.1	mg/kg
CIS-1,3-DICHLOROPROPENE	BDL	3.1	mg/kg
DICHLORODIFLUOROMETHANE	BDL	3.1	mg/kg
1,1-DICHLOROETHANE	BDL	3.1	mg/kg
1,2-DICHLOROETHANE	BDL	3.1	mg/kg
1,1-DICHLOROETHENE	BDL	3.1	mg/kg
1,2-DICHLOROPROPANE	BDL	3.1	mg/kg
ETHYLBENZENE	EST 180	3.1	mg/kg
FLUOROTRICHLOROMETHANE	BDL	3.1	mg/kg
2-HEXANONE	BDL	6.3	mg/kg
METHYLENE CHLORIDE	BDL	3.1	mg/kg
METHYL ETHYL KETONE	BDL	6.3	mg/kg
METHYL-2-PENTANONE	BDL	6.3	mg/kg
YRENE	BDL	3.1	mg/kg
1,1,2,2-TETRACHLOROETHANE	BDL	3.1	mg/kg
TETRACHLOROETHENE	BDL	3.1	mg/kg
TETRAHYDROFURAN	BDL	16	mg/kg
TOLUENE	68	3.1	mg/kg
1,2-DICHLOROETHENE (TOTAL)	BDL	3.1	mg/kg
TRANS-1,3-DICHLOROPROPENE	BDL	3.1	mg/kg
1,1,1-TRICHLOROETHANE	BDL	3.1	mg/kg
1,1,2-TRICHLOROETHANE	BDL	3.1	mg/kg
TRICHLOROETHENE	BDL	3.1	mg/kg
VINYL ACETATE	BDL	6.3	mg/kg
VINYL CHLORIDE	BDL	6.3	mg/kg
XYLENE (TOTAL)	EST 900	3.1	mg/kg
2-CHLOROETHYLVINYLETHER	BDL		mg/kg
DIETHYLETHER	BDL		mg/kg
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL		mg/kg
ETHYL ACETATE	BDL		mg/kg
METHYL-T-BUTYL ETHER	BDL	50	mg/kg
.			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	*		% Rec
TOLUENE-D8	*		% Rec
BROMOFLUOROBENZENE	*		% Rec
DILUTION FACTOR 1:630			
CKED COLUMN METHOD 8240 HAS BEEN REPLACED BY			
CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			
ALSO DETECTED:			
NONANE	EST 190 RT=26.79		

Parameter	Result	Det. Limit	Units
PROPYL CYCLOHEXANE	EST 370 RT=29.74		
DECANE	EST 230 RT=31.5		
OPYL BENZEN	EST 270 RT=31.94		
THYL METHYL BENZENE	EST 510 RT=32.29		
TRIMETHYL BENZENE	EST 630 RT=33.77		
TRIMETHYL BENZENE	EST 260 RT=35.26		
METHYL PROPYL BENZENE	EST 290 RT=35.7		
ETHYL DIMETHYL BENZENE	EST 300 RT=35.93		
1,4-DICHLOROBENZENE	EST 150 RT=35.38		

*NOTE: * DILUTED OUT*

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 05-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 1

Parameter	Result	Det. Limit	Units
ACETONE	BDL	120	mg/kg
ACROLEIN	BDL	310	mg/kg
ACRYLONITRILE	BDL	430	mg/kg
BENZENE	BDL	31	mg/kg
BROMODICHLOROMETHANE	BDL	31	mg/kg
BROMOFORM	BDL	31	mg/kg
BROMOMETHANE	BDL	63	mg/kg
CARBON DISULFIDE	BDL	31	mg/kg
CARBON TETRACHLORIDE	BDL	31	mg/kg
CHLOROBENZENE	BDL	31	mg/kg
CHLOROETHANE	BDL	63	mg/kg
CHLOROFORM	BDL	31	mg/kg
ILOROMETHANE	BDL	63	mg/kg
BROMOCHLOROMETHANE	BDL	31	mg/kg
CIS-1,3-DICHLOROPROPENE	BDL	31	mg/kg
DICHLORODIFLUOROMETHANE	BDL	31	mg/kg
1,1-DICHLOROETHANE	BDL	31	mg/kg
1,2-DICHLOROETHANE	BDL	31	mg/kg
1,1-DICHLOROETHENE	BDL	31	mg/kg
1,2-DICHLOROPROPANE	BDL	31	mg/kg
ETHYLBENZENE	190	31	mg/kg
FLUOROTRICHLOROMETHANE	BDL	31	mg/kg
2-HEXANONE	BDL	63	mg/kg
METHYLENE CHLORIDE	BDL	31	mg/kg
METHYL ETHYL KETONE	BDL	63	mg/kg
4-METHYL-2-PENTANONE	BDL	63	mg/kg
STYRENE	BDL	31	mg/kg
1,1,2,2-TETRACHLOROETHANE	BDL	31	mg/kg
TETRACHLOROETHENE	BDL	31	mg/kg
TETRAHYDROFURAN	BDL	160	mg/kg
TOLUENE	73	31	mg/kg
1,2-DICHLOROETHENE (TOTAL)	BDL	31	mg/kg
TRANS-1,3-DICHLOROPROPENE	BDL	31	mg/kg
1,1,1-TRICHLOROETHANE	BDL	31	mg/kg
1,1,2-TRICHLOROETHANE	BDL	31	mg/kg
TRICHLOROETHENE	BDL	31	mg/kg
VINYL ACETATE	BDL	63	mg/kg
VINYL CHLORIDE	BDL	63	mg/kg
LENE (TOTAL)	1100	31	mg/kg
2-CHLOROETHYLVINYLETHER	BDL	6.3	mg/kg
DIETHYLETHER	BDL	6.3	mg/kg
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	6.3	mg/kg

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	6.3	mg/kg
METHYL-T-BUTYL ETHER	BDL	500	mg/kg
SURROGATE RECOVERY			
DICHLOROETHANE-D4	*		% Rec
TOLUENE-D8	*		% Rec
BROMOFLUOROBENZENE	*		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY			
CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			
DILUTION FACTOR 1:6300			
ALSO DETECTED			
UNKNOWN HYDROCARBON	EST 170 RT=24.94		
NONANE	EST 340 RT=26.74		
DIMETHYL OCTANE	EST 150 RT=28.32		
UNKNOWN	EST 630 RT=29.66		
DECANE	EST 650 RT=31.42		
UNKNOWN	EST 440 RT=31.84		
ETHYL METHYL BENZENE	EST 630 RT=32.24		
TRIMETHYL BENZENE	EST 190 RT=32.4		
TRIMETHYL BENZENE	EST 660 RT=33.67		
METHYL PROPYL BENZENE	EST 370 RT=35.6		

*NOTE: * SURROGATES DILUTED OUT*

PCB OIL EXTRACTION SW846-3580

Analyst: A. HOAGLAND Analysis Date: 29-JUL-91 Test: P229.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.048		Grams
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB OIL EXTRACTION SW846-3580

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	20	mg/kg
PCB AROCHLOR 1221	BDL	100	mg/kg
PCB AROCHLOR 1232	BDL	20	mg/kg
PCB AROCHLOR 1242	BDL	20	mg/kg
PCB AROCHLOR 1248	BDL	20	mg/kg
PCB AROCHLOR 1254	BDL	20	mg/kg
PCB AROCHLOR 1260	940	20	mg/kg
PCB AROCHLOR 1262	BDL	20	mg/kg

NOTE: SAMPLE DILUTED 1:20 BECAUSE OF HIGH 1260

Sample Comments

* *See Note for Parameter*
BDL Below Detection Limit
EST Estimated Value
RT Retention Time

Quality Assurance Officer: GaBusck

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234845
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 10:50

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - WATER
S714

GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: R. KOBZA Analysis Date: 30-JUL-91 Test: P930.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

ARSENIC GFAA (CLP) ILM01

Analyst: M. BAUER Analysis Date: 30-JUL-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 01-AUG-91 Instrument: GFAA Test: M916.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.003	mg/L

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 05-AUG-91 Instrument: GFAA Test: M928.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 30-JUL-91 Instrument: GFAA Test: M934.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.0050	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: K. HACK Analysis Date: 29-JUL-91 Test: P931.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 30-JUL-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: B. HAHN Analysis Date: 07-AUG-91 Test: P930.4. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

BARIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	0.039	0.010	mg/L

CADMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CHROMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IROMIUM	BDL	0.010	mg/L

NICKEL ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

ALUMINUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	0.50	0.050	mg/L

ANTIMONY ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BERYLLIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0050	mg/L

COBALT ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	0.021	0.020	mg/L

prep blank was 0.036 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	0.064	0.020	mg/L

prep blank was 0.041 mg/l

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	13.	0.20	mg/L

IRON ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	0.43	0.020	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	6.4	0.20	mg/L

MANGANESE ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	0.100	0.010	mg/L

POTASSIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	2.7	0.20	mg/L

SODIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	180	0.20	mg/L

LITHIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	0.011	0.010	mg/L

MOLYBDENUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	0.012	0.010	mg/L

STRONTIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	0.12	0.010	mg/L

TIN ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	0.050	mg/L

TITANIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.010	mg/L

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510
Analyst: R. MCKAIN Analysis Date: 29-JUL-91 Test: P230.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1050		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L
PCB AROCHLOR 1262	BDL	0.0001	mg/L

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 01-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
ıLOROMETHANE	BDL	10	ug/L
[BROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
'INYL CHLORIDE	BDL	10	ug/L
(LENE (TOTAL)	BDL	5	ug/L
2-CHLOROETHYLVINYLETHER	BDL	10	ug/L
DIETHYLETHER	BDL	5	ug/L
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	5	ug/L

EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234845**

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	5	ug/L
METHYL-T-BUTYL ETHER	BDL	5	ug/L
SURROGATE RECOVERY			

DICHLOROETHANE-D4	108		% Rec
TOLUENE-D8	96		% Rec
BROMOFLUOROBENZENE	97		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G A Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
ERMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234846
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 11:00

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - WATER
S715

GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: R. KOBZA Analysis Date: 30-JUL-91 Test: P930.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

ARSENIC GFAA (CLP) ILM01

Analyst: M. BAUER Analysis Date: 30-JUL-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 01-AUG-91 Instrument: GFAA Test: M916.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.003	mg/L

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 05-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 30-JUL-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.0050	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: K. HACK Analysis Date: 29-JUL-91 Test: P931.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 30-JUL-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: B. HAHN Analysis Date: 07-AUG-91 Test: P930.4. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

BARIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	0.043	0.010	mg/L

CADMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CHROMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

NICKEL ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	BDL	0.010	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

ALUMINUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	0.62	0.050	mg/L

ANTIMONY ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BERYLLIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0050	mg/L

COBALT ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	0.029	0.020	mg/L

prep blank was 0.036 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	0.076	0.020	mg/L

prep blank was 0.041 mg/l

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	13.	0.20	mg/L

IRON ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	1.0	0.020	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	6.6	0.20	mg/L

MANGANESE ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	0.11	0.010	mg/L

POTASSIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	3.2	0.20	mg/L

SODIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	190	0.20	mg/L

LITHIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	0.013	0.010	mg/L

MOLYBDENUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
OLYBDENUM	0.012	0.010	mg/L

STRONTIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	0.12	0.010	mg/L

TIN ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	0.050	mg/L

TITANIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.010	mg/L

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510
Analyst: R. MCKAIN Analysis Date: 29-JUL-91 Test: P230.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1050		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L
PCB AROCHLOR 1262	BDL	0.0001	mg/L

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 01-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
‡LOROMETHANE	BDL	10	ug/L
⌐IBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
"INYL CHLORIDE	BDL	10	ug/L
YLENE (TOTAL)	BDL	5	ug/L
2-CHLOROETHYLVINYLETHER	BDL	10	ug/L
DIETHYLETHER	BDL	5	ug/L
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	5	ug/L

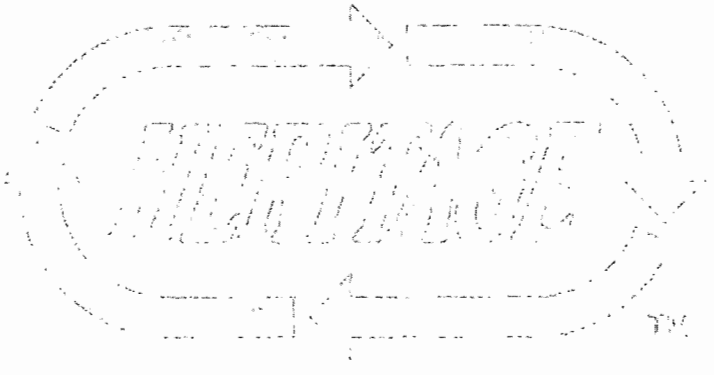
EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234846**

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	5	ug/L
METHYL-T-BUTYL ETHER	BDL	5	ug/L
SURROGATE RECOVERY			

DICHLOROETHANE-D4	110		% Rec
TOLUENE-D8	100		% Rec
BROMOFLUOROBENZENE	98		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			

Sample Comments

BDL Below Detection Limit



Quality Assurance Officer: GA Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234847
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 11:40

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - WATER
S716

GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: R. KOBZA Analysis Date: 30-JUL-91 Test: P930.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

ARSENIC GFAA (CLP) ILM01

Analyst: M. BAUER Analysis Date: 30-JUL-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 01-AUG-91 Instrument: GFAA Test: M916.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	0.0031	0.003	mg/L

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 05-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 30-JUL-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.010	mg/L

DILUTION = 1:2

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 29-JUL-91 Test: P931.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	100		mL
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 30-JUL-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: B. HAHN Analysis Date: 07-AUG-91 Test: P930.4. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

BARIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	0.038	0.010	mg/L

CADMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CHROMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	0.010	mg/L

NICKEL ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	0.036	0.010	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

ALUMINUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	0.35	0.050	mg/L

ANTIMONY ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BERYLLIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0050	mg/L

COBALT ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	0.026	0.020	mg/L

prep blank was 0.036 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	0.56	0.020	mg/L

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	100	0.20	mg/L

IRON ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	0.92	0.020	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
AGNESIUM	66.	0.20	mg/L

MANGANESE ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	0.47	0.010	mg/L

POTASSIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	3.1	0.20	mg/L

SODIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	87.	0.20	mg/L

LITHIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	BDL	0.010	mg/L

MOLYBDENUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	0.010	mg/L

STRONTIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	0.39	0.010	mg/L

TIN ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	0.050	mg/L

TITANIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.010	mg/L

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510
Analyst: R. MCKAIN Analysis Date: 29-JUL-91 Test: P230.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1050		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L
PCB AROCHLOR 1262	BDL	0.0001	mg/L

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 02-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
HLOROMETHANE	BDL	10	ug/L
IBROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
I,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
"INYL CHLORIDE	BDL	10	ug/L
YLENE (TOTAL)	BDL	5	ug/L
2-CHLOROETHYLVINYLETHER	BDL	10	ug/L
DIETHYLETHER	BDL	5	ug/L
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	5	ug/L

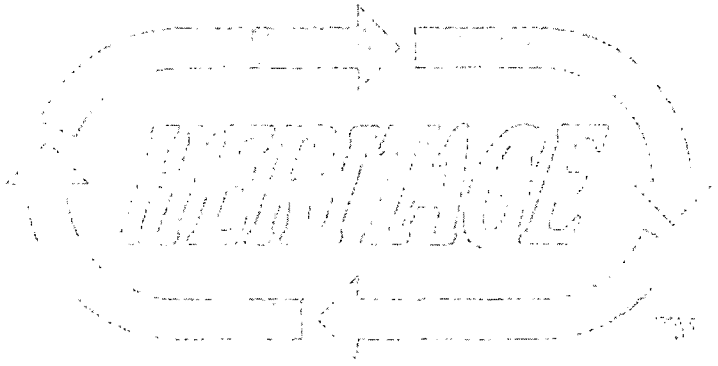
EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234847**

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	5	ug/L
METHYL-T-BUTYL ETHER	BDL	5	ug/L
SURROGATE RECOVERY			

DICHLOROETHANE-D4	100		% Rec
TOLUENE-D8	101		% Rec
BROMOFLUOROBENZENE	98		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			

Sample Comments

BDL Below Detection Limit



Quality Assurance Officer: GaBusck

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234848
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 12:30

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - WATER
S717

GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: R. KOBZA Analysis Date: 30-JUL-91 Test: P930.6. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

ARSENIC GFAA (CLP) ILM01

Analyst: M. BAUER Analysis Date: 30-JUL-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	0.0050	mg/L

LEAD GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 01-AUG-91 Instrument: GFAA Test: M916.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	BDL	0.003	mg/L

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 05-AUG-91 Instrument: GFAA Test: M928.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.0050	mg/L

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 30-JUL-91 Instrument: GFAA Test: M934.2. 0

Prep: GFAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.0050	mg/L

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Analyst: K. HACK Analysis Date: 29-JUL-91 Test: P931.6. 0

Parameter	Result	Det. Limit	Units
ITIAL WEIGHT OR VOLUME	100		mL
INAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 30-JUL-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.00020	mg/L

FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01
Analyst: B. HAHN Analysis Date: 07-AUG-91 Test: P930.4. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL WEIGHT OR VOLUME	50		mL

BARIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	0.016	0.010	mg/L

CADMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.0050	mg/L

CHROMIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IROMIUM	BDL	0.010	mg/L

NICKEL ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	0.016	0.010	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	0.010	mg/L

ALUMINUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	0.20	0.050	mg/L

ANTIMONY ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	0.030	mg/L

BERYLLIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	0.0050	mg/L

COBALT ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	BDL	0.010	mg/L

COPPER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	0.023	0.020	mg/L

prep blank was 0.036 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	0.010	mg/L

ZINC ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	0.086	0.020	mg/L

prep blank was 0.041 mg/l

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	68.	0.20	mg/L

IRON ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	2.6	0.020	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	50.	0.20	mg/L

MANGANESE ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	0.41	0.010	mg/L

POTASSIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	1.3	0.20	mg/L

SODIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	33.	0.20	mg/L

LITHIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	0.028	0.010	mg/L

MOLYBDENUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	0.010	mg/L

STRONTIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	0.11	0.010	mg/L

TIN ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	0.050	mg/L

TITANIUM ICP SW846-6010
Analyst: J. CARSON Analysis Date: 08-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF AQUEOUS SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	BDL	0.010	mg/L

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510
Analyst: R. MCKAIN Analysis Date: 29-JUL-91 Test: P230.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1050		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L
PCB AROCHLOR 1262	BDL	0.0001	mg/L

IDEM VOLATILE ORGANICS TARGET COMPOUND LIST SW846-8240

Analyst: R. SHAMP Analysis Date: 02-AUG-91 Instrument: GC/MS VOA Test: 0530.1. 0

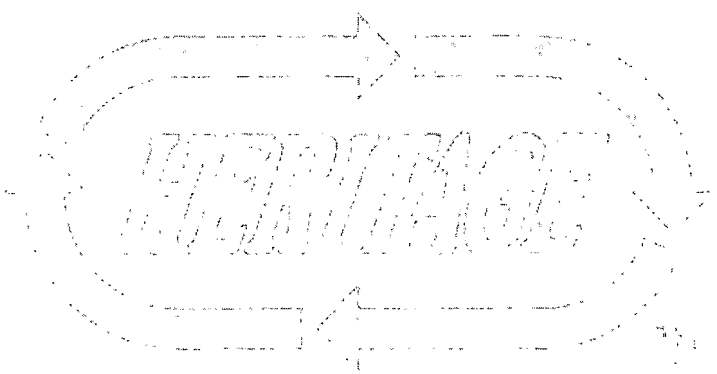
Parameter	Result	Det. Limit	Units
ACETONE	BDL	20	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	70	ug/L
BENZENE	BDL	5	ug/L
BROMODICHLOROMETHANE	BDL	5	ug/L
BROMOFORM	BDL	5	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	5	ug/L
CARBON TETRACHLORIDE	BDL	5	ug/L
CHLOROBENZENE	BDL	5	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5	ug/L
‹LOROMETHANE	BDL	10	ug/L
[BROMOCHLOROMETHANE	BDL	5	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5	ug/L
DICHLORODIFLUOROMETHANE	BDL	5	ug/L
1,1-DICHLOROETHANE	BDL	5	ug/L
1,2-DICHLOROETHANE	BDL	5	ug/L
1,1-DICHLOROETHENE	BDL	5	ug/L
1,2-DICHLOROPROPANE	BDL	5	ug/L
ETHYLBENZENE	BDL	5	ug/L
FLUOROTRICHLOROMETHANE	BDL	5	ug/L
2-HEXANONE	BDL	10	ug/L
METHYLENE CHLORIDE	BDL	5	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5	ug/L
TETRACHLOROETHENE	BDL	5	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
TOLUENE	BDL	5	ug/L
1,2-DICHLOROETHENE (TOTAL)	BDL	5	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5	ug/L
1,1,1-TRICHLOROETHANE	BDL	5	ug/L
1,1,2-TRICHLOROETHANE	BDL	5	ug/L
TRICHLOROETHENE	BDL	5	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
LENE (TOTAL)	BDL	5	ug/L
2-CHLOROETHYLVINYLETHER	BDL	10	ug/L
DIETHYLETHER	BDL	5	ug/L
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	BDL	5	ug/L

EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234848**

Parameter	Result	Det. Limit	Units
ETHYL ACETATE	BDL	5	ug/L
METHYL-T-BUTYL ETHER	BDL	5	ug/L
SURROGATE RECOVERY			
DICHLOROETHANE-D4	102		% Rec
TOLUENE-D8	97		% Rec
BROMOFLUOROBENZENE	107		% Rec
PACKED COLUMN METHOD 8240 HAS BEEN REPLACED BY CAPILLARY COLUMN METHOD 8260 ON THIS INSTRUMENT			

Sample Comments

BDL Below Detection Limit



Quality Assurance Officer: GaBusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234849
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 16:00

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S722

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	68	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	4.0	1.0	mg/kg

DILUTION = 1:2

SELENIUM GFAA (CLP) ILM01
Analyst: W. WATNESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.50	mg/kg

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 07-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	0.063	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	66.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.1	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	12.	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	92.	5.0	mg/kg
DILUTION 1:100			

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	10.	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	1.0	1.0	mg/kg
DILUTION 1:100			

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	4500	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.6	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	4.6	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	16.	2.0	mg/kg

prep blank was 0.022 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	13.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	120	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	17000	20	mg/kg

DILUTION 1:100

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	21000	20	mg/kg

DILUTION 1:100

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	12000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2100	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	490	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	440	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	100	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	3.3	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	25.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	53.	1.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	54	1.0	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	490	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	440	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	100	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	3.3	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	25.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	53.	1.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	54	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550

Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	30.17		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	0.26	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G.A. Busck

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234850
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 16:25

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S723

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	68	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	6.0	2.5	mg/kg

DILUTION = 1:5

SELENIUM GFAA (CLP) ILM01
Analyst: W. WATNESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	1.0	mg/kg

DILUTION = 1:2

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 09-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	0.071	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	220	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.6	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	16.	1.0	mg/kg

DILUTION 1:100

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	81.	5.0	mg/kg

DILUTION 1:100

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	11.	1.0	mg/kg

DILUTION 1:100

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

DILUTION 1:100

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	5400	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

DILUTION 1:100

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

DILUTION 1:100

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.7	0.50	mg/kg

DILUTION 1:100

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	15.	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	18.	2.0	mg/kg

prep blank was 0.022 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	22.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	160	2.0	mg/kg

DILUTION 1:100

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	17000	20	mg/kg

DILUTION 1:100

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	16000	20	mg/kg

DILUTION 1:100

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	27000	2.0	mg/kg
DILUTION 1:100			

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2600	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	2000	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	450	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	90.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	3.4	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	24.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	55.	1.0	mg/kg

DILUTION 1:100

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	60	1.0	mg/kg

DILUTION 1:100

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.34		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: _____

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234851
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 16:54

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S724

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	68	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	3.0	1.0	mg/kg

DILUTION = 1:2

SELENIUM GFAA (CLP) ILM01
Analyst: W. WATNESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.50	mg/kg

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 09-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	57.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	0.84	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	11.	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	52.	5.0	mg/kg
DILUTION 1:100			

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	9.1	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg
DILUTION 1:100			

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	4500	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	4.8	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	10.	2.0	mg/kg

prep blank was 0.022 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	12.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	86.	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	27000	20	mg/kg

DILUTION 1:100

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	10000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2900	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	320	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	450	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	67.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	4.4	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	29.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	37.	1.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	37	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	30.48		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

CALCIUM ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	26000	20	mg/kg

DILUTION 1:100

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: _____

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234852
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 18:45

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S725

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	65	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILMO1
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILMO1
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILMO1
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILMO1

Parameter	Result	Det. Limit	Units
ARSENIC	2.8	1.0	mg/kg

DILUTION = 1:2

SELENIUM GFAA (CLP) ILMO1
Analyst: W. WATNESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILMO1

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.50	mg/kg

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 09-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	1.0	mg/kg

DILUTION = 1:2

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	58.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	0.80	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	11.	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	42.	5.0	mg/kg
DILUTION 1:100			

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	11.	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg
DILUTION 1:100			

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	7100	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	5.6	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	9.2	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	15.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	72.	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALCIUM	7900	20	mg/kg
LUTION 1:100			

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	7700	20	mg/kg
DILUTION 1:100			

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	12000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2000	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	440	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	620	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	68.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	6.7	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	13.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	62.	1.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	40	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550

Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
IITIAL WEIGHT OR VOLUME	29.82		Grams
rINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GaBusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234853
	Complete 23-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 19:00

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S726

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	68	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	5.9	2.5	mg/kg

DILUTION = 1:5

SELENIUM GFAA (CLP) ILM01
Analyst: W. WATNESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.50	mg/kg

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 09-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	mg/kg

DILUTION = 1:4

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	53.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.3	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	7.8	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	31.	5.0	mg/kg
DILUTION 1:100			

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	10	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg
DILUTION 1:100			

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	5600	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	30	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	5.6	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	8.8	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	14.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	85	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	1400	20	mg/kg
DILUTION 1:100			

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	1400	20	mg/kg
DILUTION 1:100			

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	22000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	960	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	310	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	470	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	42.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	5.9	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	7.4	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	37	1.0	mg/kg

DILUTION 1:100

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TANIUM	35	1.0	mg/kg

DILUTION 1:100

EMS HERITAGE LABORATORIES, INC. Lab Sample ID: A234853

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.31		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	0.56	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GaBusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234854
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 24-JUL-91 19:45

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S727

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	89	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 17-AUG-91 Test: P930.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: M. BAUER Analysis Date: 20-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	14	2.5	mg/kg

SELENIUM GFAA (CLP) ILM01
Analyst: W. WAINESS Analysis Date: 14-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	1.0	mg/kg

DILUTION = 1:2

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 09-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	0.34	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 13-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 3

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	160	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.0	0.50	mg/kg

DILUTION 1:100

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	13.	1.0	mg/L

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	140	5.0	mg/kg
DILUTION 1:100			

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	14.	1.0	mg/L

SILVER ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 21-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg
DILUTION 1:100			

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	8000	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M902.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/L

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	8.0	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	28.	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	19.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	110	2.0	mg/L

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALCIUM	55000	20	mg/kg
TLUTION 1:100			

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 14-AUG-91 Instrument: ICP Test: M909.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	46000	20	mg/kg
DILUTION 1:100			

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	16000	2.0	mg/L

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	1800	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	1100	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	740	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	49.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	5.6	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)LYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 05-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	57.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	11	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	61.	1.0	mg/L

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 07-AUG-91 Instrument: ICP Test: M136.3. 1
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	95	1.0	mg/L

EMS HERITAGE LABORATORIES, INC. **Lab Sample ID: A234854**

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	30.05		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: H A Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234855
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 07:40

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S728

TOTAL SOLIDS EPA 160.3
Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	89	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01
Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	17	4.0	mg/kg

DILUTION = 1:8

SELENIUM GFAA (CLP) ILM01
Analyst: K. KEHOE Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	1.00	mg/kg

DILUTION = 1:2

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 12-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
NITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0

Parameter	Result	Det. Limit	Units
MERCURY	0.28	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	140	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.1	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	7.3	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	94.	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	9.6	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	4700	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
RYLLIUM	1.8	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	6.5	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	31.	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	15.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	78.	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 19-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	66000	1000	mg/kg
DILUTION 1:50			

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	11000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	1500	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	930	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	470	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	35.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	2.5	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	52.	1.0	mg/kg

TIN ICP SW846-6010

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	6.0	5.0	mg/kg

TITANIUM ICP SW846-6010

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	85	1.0	mg/kg
DILUTION 1:50			

PCB SONICATION EXTRACTION SW846-3550

Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	30.05		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GABusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
CMS HERITAGE LABORATORIES, INC. 6901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234856
	Complete 22-AUG-91	PO Number 70D
	Printed 26-AUG-91	Sampled 25-JUL-91 07:55

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S729

TOTAL SOLIDS EPA 160.3

Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	90	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	5.7	2.5	mg/kg

DILUTION = 1:5

SELENIUM GFAA (CLP) ILM01

Analyst: K. KEHOE Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	0.50	mg/kg

THALLIUM GFAA (CLP) ILM01

Analyst: P. SIMS Analysis Date: 12-AUG-91 Instrument: GFAA Test: M934.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
\RIUM	59.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	0.98	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	8.7	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	44.	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	9.1	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	6700	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
)BALT	5.0	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	14.	2.0	mg/kg

prep blank was 0.030 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	18.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	67.	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 19-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
\LCIUM	66000	1000	mg/kg

DILUTION 1:50

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	13000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2300	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	290	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	490	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	65.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	5.4	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	71.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	5.0	mg/kg

TITANIUM ICP SW846-6010

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	53	1.0	mg/kg

DILUTION 1:50

PCB SONICATION EXTRACTION SW846-3550

Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.81		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.4	mg/kg
PCB AROCHLOR 1221	BDL	2	mg/kg
PCB AROCHLOR 1232	BDL	.4	mg/kg
PCB AROCHLOR 1242	BDL	.4	mg/kg
PCB AROCHLOR 1248	BDL	.4	mg/kg
PCB AROCHLOR 1254	BDL	.8	mg/kg
PCB AROCHLOR 1260	3.3	.8	mg/kg
PCB AROCHLOR 1262	BDL	.8	mg/kg

NOTE: SAMPLE DILUTED 1:5 BECAUSE OF HIGH 1260

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GABusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 1901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234857
	Complete 22-AUG-91	PO Number 70D
	Printed 03-SEP-91	Sampled 25-JUL-91 08:25

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S730

TOTAL SOLIDS EPA 160.3

Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	89	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	12	2.5	mg/kg

DILUTION = 1:5

SELENIUM GFAA (3 POINT MSA) (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.6. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	2.0	0.50	mg/kg
ADDITION 1	0.010		mg/kg
ADDITION 2	0.020		mg/kg
ADDITION 3	0.030		mg/kg
SAMPLE	0.0093		Conc
SAMPLE + ADD 1	0.015		Conc
SAMPLE + ADD 2	0.020		Conc
SAMPLE + ADD 3	0.025		Conc
DILUTION	1		

"UNACCEPTABLE SINGLE ADDITION RECOVERY REQUIRED 3-POINT MSA.

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 16-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	1.0	mg/kg
DILUTION = 1:2			

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	0.16	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	120	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	2.6	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	9.1	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	350	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	13.	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	1.0	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	4500	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ITIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.8	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	4.5	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	76.	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	14.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	290	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: J. CARSON Analysis Date: 19-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	85000	1000	mg/kg

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	11000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	3200	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	280	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	700	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	98.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	4.7	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	71.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	6.5	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	100	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	30.31		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
B AROCHLOR 1016	BDL	.4	mg/kg
B AROCHLOR 1221	BDL	2	mg/kg
PCB AROCHLOR 1232	BDL	.4	mg/kg
PCB AROCHLOR 1242	BDL	.4	mg/kg
PCB AROCHLOR 1248	BDL	.4	mg/kg
PCB AROCHLOR 1254	BDL	.8	mg/kg
PCB AROCHLOR 1260	2.9	.8	mg/kg
PCB AROCHLOR 1262	BDL	.8	mg/kg

NOTE: SAMPLE DILUTED 1:5 BECAUSE OF HIGH 1260

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G A Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
CMS HERITAGE LABORATORIES, INC. 1901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234858
	Complete 22-AUG-91	PO Number 70D
	Printed 03-SEP-91	Sampled 25-JUL-91 08:45

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S731

TOTAL SOLIDS EPA 160.3

Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	66	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
ITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	8.5	4.0	mg/kg

DILUTION = 1:8

SELENIUM GFAA (3 POINT MSA) (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.6. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	0.88	0.50	mg/kg
ADDITION 1	0.010		mg/kg
ADDITION 2	0.020		mg/kg
ADDITION 3	0.030		mg/kg
SAMPLE	0.0060		Conc
SAMPLE + ADD 1	0.012		Conc
SAMPLE + ADD 2	0.019		Conc
SAMPLE + ADD 3	0.027		Conc
DILUTION	1		

'''ACCEPTABLE SINGLE ADDITION RECOVERY REQUIRED 3-POINT MSA.

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 16-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: K. HACK Analysis Date: 07-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: J. WARE Analysis Date: 08-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	0.11	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
NAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	88.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.7	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	9.8	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	99.	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	12.	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	4000	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.8	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	5.7	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	37.	2.0	mg/kg

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	16.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	230	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	15000	20.	mg/kg

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	17000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	2100	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	1100	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	440	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	99.	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	3.1	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	29.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	150	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	69	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.76		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
B AROCHLOR 1016	BDL	.08	mg/kg
B AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	0.35	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G A Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
ENVIRONMENTAL MS HERITAGE LABORATORIES, INC. 901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234859
	Complete 22-AUG-91	PO Number 70D
	Printed 03-SEP-91	Sampled 25-JUL-91 09:30

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S732

TOTAL SOLIDS EPA 160.3

Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	80	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	12	5.0	mg/kg

DILUTION = 1:10

SELENIUM GFAA (3 POINT MSA) (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.6. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	1.4	0.50	mg/kg
ADDITION 1	0.010		mg/kg
ADDITION 2	0.020		mg/kg
ADDITION 3	0.030		mg/kg
SAMPLE	0.0091		Conc
SAMPLE + ADD 1	0.016		Conc
SAMPLE + ADD 2	0.022		Conc
SAMPLE + ADD 3	0.029		Conc
DILUTION	1		

"UNACCEPTABLE SINGLE ADDITON RECOVERY REQUIRED 3-POINT MSA.

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 16-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: J. WARE Analysis Date: 12-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: K. HACK Analysis Date: 15-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
NAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	81.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	1.9	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	12.	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	57.	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	17.	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	3100	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ITIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.8	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	5.2	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	17.	2.0	mg/kg

prep blank was 0.030 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NADIUM	18.	1.0	mg/kg

ZINC ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	350	2.0	mg/kg

CALCIUM ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M909.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	38000	20.	mg/kg

IRON ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	17000	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	1700	20.	mg/kg

MANGANESE ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MANGANESE	3000	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	350	20.	mg/kg

SODIUM ICP (CLP) ILM01

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	220	20.	mg/kg

LITHIUM ICP SW846-6010

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	2.4	1.0	mg/kg

MOLYBDENUM ICP SW846-6010

Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0

Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	41.	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	26	5.0	mg/kg

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	65	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.84		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GABusch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	26-JUL-91	A234860
	Complete 22-AUG-91	PO Number 70D
	Printed 03-SEP-91	Sampled 25-JUL-91 10:00

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. PAT AUSTIN P.O. BOX 6015 105 SOUTH MERIDIAN INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM CERCLA - S/S/S
S733

TOTAL SOLIDS EPA 160.3

Analyst: R. RIFE Analysis Date: 30-JUL-91 Test: G401.7. 0

Parameter	Result	Det. Limit	Units
SOLIDS	95	1	Percent

GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Analyst: A. STOCKBURGER Analysis Date: 30-JUL-91 Test: P930.7. 0

Parameter	Result	Det. Limit	Units
IITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

ARSENIC GFAA (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 05-AUG-91 Instrument: GFAA Test: M903.2. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ARSENIC	4.8	1.5	mg/kg

DILUTION = 1:3

SELENIUM GFAA (3 POINT MSA) (CLP) ILM01

Analyst: W. WATNESS Analysis Date: 21-AUG-91 Instrument: GFAA Test: M928.6. 0

Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SELENIUM	0.74	0.50	mg/kg
ADDITION 1	0.010		mg/kg
ADDITION 2	0.020		mg/kg
ADDITION 3	0.030		mg/kg
SAMPLE	0.0053		Conc
SAMPLE + ADD 1	0.013		Conc
SAMPLE + ADD 2	0.021		Conc
SAMPLE + ADD 3	0.029		Conc
DILUTION	1		

UNACCEPTABLE SINGLE ADDITION RECOVERY REQUIRED 3-POINT MSA.

THALLIUM GFAA (CLP) ILM01
Analyst: P. SIMS Analysis Date: 12-AUG-91 Instrument: GFAA Test: M934.2. 0
Prep: GFAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	0.50	mg/kg

MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: J. WARE Analysis Date: 12-AUG-91 Test: P931.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	0.4		Grams
FINAL VOLUME	100		mL

MERCURY CVAA (CLP) ILM01
Analyst: K. HACK Analysis Date: 15-AUG-91 Instrument: CVAA Test: M920.2. 0
Prep: MERCURY CVAA ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.050	mg/kg

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 30-JUL-91 Test: P929.7. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 02-AUG-91 Test: P929.7. 1

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
NAL WEIGHT OR VOLUME	100		mL

FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01
Analyst: S. STRUEWING Analysis Date: 15-AUG-91 Test: P929.7. 2

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1		Grams
FINAL WEIGHT OR VOLUME	100		mL

BARIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M904.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BARIUM	91.	1.0	mg/kg

CADMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M908.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CADMIUM	0.57	0.50	mg/kg

CHROMIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M910.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CHROMIUM	6.6	1.0	mg/kg

LEAD ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M916.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LEAD	41.	5.0	mg/kg

NICKEL ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M922.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NICKEL	7.9	1.0	mg/kg

SILVER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 09-AUG-91 Instrument: ICP Test: M930.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SILVER	BDL	1.0	mg/kg

ALUMINUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M901.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ALUMINUM	5700	5.0	mg/kg

ANTIMONY ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M902.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ITIMONY	BDL	3.0	mg/kg

BERYLLIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M905.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
BERYLLIUM	1.3	0.50	mg/kg

COBALT ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M911.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COBALT	10.	1.0	mg/kg

COPPER ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M912.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
COPPER	7.2	2.0	mg/kg

prep blank was 0.030 mg/l

VANADIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M938.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
VANADIUM	14.	1.0	mg/kg

ZINC ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M939.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
ZINC	27.	2.0	mg/kg

CALCIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M909.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
CALCIUM	630	20.	mg/kg

IRON ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M915.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
IRON	8700	2.0	mg/kg

MAGNESIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M918.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MAGNESIUM	800	20.	mg/kg

MANGANESE ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M919.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
NGANESE	1100	1.0	mg/kg

POTASSIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M926.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
POTASSIUM	410	20.	mg/kg

SODIUM ICP (CLP) ILM01
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M931.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
SODIUM	BDL	20.	mg/kg

LITHIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M117.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
LITHIUM	3.6	1.0	mg/kg

MOLYBDENUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M121.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
MOLYBDENUM	BDL	1.0	mg/kg

STRONTIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M132.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
STRONTIUM	3.5	1.0	mg/kg

TIN ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M135.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TIN	BDL	MG/KG	mg/L

TITANIUM ICP SW846-6010
Analyst: M. JAO Analysis Date: 06-AUG-91 Instrument: ICP Test: M136.3. 0
Prep: FAA OR ICP ACID DIGESTION OF S/S/S SAMPLES (CLP) ILM01

Parameter	Result	Det. Limit	Units
TITANIUM	72	1.0	mg/kg

PCB SONICATION EXTRACTION SW846-3550
Analyst: D. FULP Analysis Date: 29-JUL-91 Test: P231.1. 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	29.99		Grams
FINAL VOLUME	25		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080
Analyst: L. JULIAN Analysis Date: 04-AUG-91 Instrument: GC/ECD Test: 0301.2. 0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	.08	mg/kg
PCB AROCHLOR 1221	BDL	.4	mg/kg
PCB AROCHLOR 1232	BDL	.08	mg/kg
PCB AROCHLOR 1242	BDL	.08	mg/kg
PCB AROCHLOR 1248	BDL	.08	mg/kg
PCB AROCHLOR 1254	BDL	.16	mg/kg
PCB AROCHLOR 1260	BDL	.16	mg/kg
PCB AROCHLOR 1262	BDL	.16	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: G A Busch

APPENDIX E

SITE GEOLOGIC ASSESSMENT

(2-89)

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

FICE MEMORANDUM

DATE: September 23, 1991

TO: Mark Jaworski
Site Investigation Section

THRU:

FROM: Billy E. Giles, Geologist BEG
Site Investigation Section 10/1/91

SUBJECT: Dugger Electric
Dugger, Sullivan County
Geologic Assessment

INTRODUCTION

The Dugger Electric Site is located at First and Main Street, Dugger, Sullivan County, Indiana. The site is in Section 1, T. 7 N., R. 8 W. The facility reconditions electrical transformers. Several hundred transformers are present on the site. A well on the site was found to contain an elevated level of PCB oil when sampled by the Indiana Department of Environmental Management. PCB oil was also found in a ditch that runs beneath the site, then flows through residential areas of Dugger, and discharges into Dugger Lake.

SOILS

The soil on the Dugger Electric site is the Ava silt loam; a deep, moderately well-drained soil. Ava soils have a medium-textured surface layer and mainly a moderately fine textured subsoil. These soils formed on uplands in 30 to 55 inches of loess over material weathered from till. A fragipan begins at a depth of 22 to 34 inches. A typical profile of an Ava soil has an 11-inch surface layer of silt loam, dark grayish brown in the upper 5 inches and brown in the lower part. In the vicinity of the site, 3 to 6 inches of the original surface layer has been lost through erosion. The present surface layer is a mixture of the rest of this original surface layer and some of the yellowish-brown subsoil. The subsoil is about 44 inches thick. The upper 11 inches is yellowish-brown, friable heavy silt loam over light yellowish-brown, firm silty clay loam. The lower part is fragipan. The upper part of the fragipan is mottled, light brown-gray and yellowish-brown, firm silty clay loam, and the lower part is pale-brown and yellowish-brown, friable silt loam. The underlying material is brown to yellowish-brown, friable loam. Surface runoff is slow to medium and the available moisture capacity is medium. The organic-matter content is low. Permeability is slow. Hydraulic conductivity of the upper 22 inches is in the range of 5×10^{-4} to 1.5×10^{-3} cm/sec, from 22 to 48 inches is in the range of 1.5×10^{-4} to 5×10^{-4} cm/sec, from 48 to 55 inches the range is 3.5×10^{-5} to 1.5×10^{-4} cm/sec, and from 55 to 100 inches the hydraulic conductivity ranges from 5×10^{-4} to 1.5×10^{-3} cm/sec. The surface layer is strongly acid; the pH ranges from 5.1 to 6.0 in the upper 22 inches, 4.6 to 5.5 from 22 to 48 inches, from 5.1 to 5.5 between 48 and 55 inches, and from 5.1 to 6.6 between 55 and 100 inches.

GEOLOGY

The Dugger Electric site is located in an area where a relatively thin layer of unconsolidated glacial till overlies the Pennsylvanian sedimentary bedrock. Dugger is near the boundary between the Dugger Formation of the older Carbondale Group and the Shelburn Formation of the McLeansboro Formation above it. These rocks dip to the west toward the center of the Illinois Basin. The Dugger Formation, which at the site is either exposed at the bedrock surface or covered by only a thin layer of the Shelburn Formation is composed mainly of shale and sandstone units, but also contains four coal members and four limestone members. The type locality for the Dugger Formation is located two miles northeast of Dugger. The Shelburn Formation may be present at the bedrock surface beneath the site. The Shelburn is composed mainly of shale, siltstone, and sandstone, but also contains beds of limestone, coal, and clay many of which are thin and discontinuous.

Above the bedrock is approximately 20 to 50 feet unconsolidated sediments composed of Illinoian glacial till and loess. The site is south of the maximum extent of Wisconsinan glacial advance, but was covered by the earlier Illinoian glaciation. Thus, the till is more weathered than the till that covers the surface of most of the northern two-thirds of Indiana. Above the till is several feet of loess, a windblown silt deposit. The loess was derived from glacial outwash deposited by meltwater streams. The source of the loess in the Dugger area was probably the glacial sluiceway now occupied by the valley of the Wabash River.

HYDROGEOLOGY

Surface-water drainage from the site is by way of a ditch that flows east to west across the site. Numerous storm drains on the site enhance the surface-water runoff into the ditch beneath the site. The ditch continues through Dugger and discharges into Dugger Lake approximately 1500 feet west of the site. Dugger Lake is a final-cut lake in an old coal surface-mined area on the southwest side of Dugger.

Well logs on file at the Division of Water, Indiana Department of Natural Resources show only two wells in the vicinity of Dugger, both northeast of town. However, numerous residential wells are known to exist in the community. These wells were probably installed before wells were required to be recorded with DNR and/or they are relatively shallow driven wells that have no logs recorded. The two well logs recorded at DNR are both bedrock wells that encountered bedrock at approximately 20 feet. The unrecorded wells in Dugger are probably completed in the unconsolidated material above the bedrock and are between 20 and 50 feet deep. The hydraulic conductivity of the unconsolidated material is probably in the range of 10^{-6} to 10^{-2} cm/sec in the sand and gravel deposits. The bedrock has a lower primary permeability, but fractures in the rock provide pathways for water movement. Solution features in limestone, which may be present in the area, can increase permeability significantly. Coal seams also are relatively permeable. The most important pathway for ground-water movement in the area is the maze of underground mine shafts and tunnels that crisscross the area. These conduits can move water very rapidly compared to the natural flow through porous or fractured media. The flow direction from the site is probably to the southwest toward Dugger Lake. However, the impact of present and past mining activities can alter the flow direction.

SUMMARY AND RECOMMENDATIONS

The Dugger Electric site has documented contamination of ground water beneath the site. Contamination could migrate from the site by way of a ditch which flows beneath the site and through the ground-water pathway by way of the 20 to 50 feet of unconsolidated material above the bedrock or by way of mine tunnels which are numerous in the area.

Recommendations for sampling include taking ground-water samples from the on-site well and from nearby residential wells and taking numerous sediment samples from the site and from the ditch between the site and Dugger Lake.

REFERENCES

Kelly, Leo A., 1971, Soil Survey of Sullivan County, Indiana, U.S. Department of Agriculture, Soil Conservation Service, 73 p.

Shaver, Robert H., et al., 1986, Compendium of Paleozoic Rock-Unit Stratigraphy in Indiana - A Revision, Indiana Department of Natural Resources, Geological Survey Bulletin 59, 203 p.

APPENDIX F

INDIANA DEPARTMENT OF NATURAL RESOURCES

WELL LOGS

①

DRILLED FOR O.S.M. CONTRACT LEROY DAVIS USGS PAID FOR WELLS

Hall #1

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46204
Telephone 633-5267 Area Code 317

WATER WELL RECORD

WELL LOCATION (Fill in completely - Refer to instruction sheet)

County in which well was drilled _____ Civil Township _____

Driving directions to the well location: Include County Road Names, Numbers, Subdivision Name, lot number, distinctive landmarks, etc.

Go East on Hwy 54 to Dugger turn north at Railroad Crossing 3 Blocks then East 2½ Blocks to Dugger, Ind. small strip mine.

NAME OF WELL OWNER and/or BUILDING CONTRACTOR

Well Owner _____ Address _____

U.S. Dept of Interior Geological Survey Address Indianapolis, In.
Building Contractor

Name of Well Drilling Contractor: R.E. VANGILDER WELL DRILLING
R.R. 24 BOX 511
Address TERRE HAUTE, N. 47802
PH.: 299-2523

Name of Drilling Equipment Operator: _____

WELL INFORMATION

Depth of well: 70' Date well was completed: 10-12-79

Diameter of casing or drive pipe: 5" Total Length: 71½'

Diameter of liner (if used): _____ Total Length: _____

Diameter of Screen: _____ Length: 40 Slot Size: 1/8

Type of Well: Drilled ☐ Gravel Pack ☒ Driven ☐ Other Test

Use of Well: For Home ☐ For Industry ☐ For Public Supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☒ Rev. Rotary ☐ Jet ☐ Bucket Rig ☐

Static water level in completed well (Distance from ground to water level) 22 feet

Bailer Test: Hours Tested _____ Rate 2 g.p.m. Drawdown _____ ft. (Drawdown is the difference between static level and water level at end of test)

Pumping Test: Hours Tested _____ Rate _____ g.p.m. Drawdown _____ ft.

Signature R. E. VanGilder

Date 10-15-79

FOR WELL LOG SPACE USE REVERSE SIDE OR ATTACH

(2)

DIVISION OF WATER
DEPARTMENT OF NATURAL RESOURCES, STATE OF INDIANA
STATE OFFICE BUILDING
INDIANAPOLIS, INDIANA 46209

WATER WELL RECORD

INFORMATION ON WELL LOCATION

County in which well was drilled: Sullivan Civil Township: Cass

Congressional township: _____ Range: _____ Number of section: _____

(Fill in as completely as possible)

Describe in your own words the well location with respect to nearby towns, roads, streets or distinctive landmarks: 1½ miles East of Dugger, Ind

Name of owner: Norman Nobles Address: Box 543 Dugger, Ind

Name of Well Drilling Contractor: Orvil D Majors

Address: 1089 N.E. E. St. Linton, Ind.

Name of Drilling Equipment Operator: Orvil D. Majors

INFORMATION ON THE WELL

Completed depth of well: 50 ft. Date well was completed: 7-1-70

Diameter of outside casing or drive pipe: 8 in Length: 20 ft

Diameter of inside casing or liner: 50 ft Length: 32 ft.

Diameter of Screen: _____ Length: _____ Slot size: _____

Type of Well: Drilled ☑ Gravel Pack ☐ Driven ☐ Other _____

Use of Well: For home ☑ For industry ☐ For public supply ☐ Stock ☐

Method of Drilling: Cable Tools ☐ Rotary ☐ Rev. Rotary ☐ Jet ☐ Driven ☐

Static water level in completed well (Distance from ground to water level) _____ ft.

Bailer Test: Hours tested _____ Rate _____ g.p.m. Drawdown _____ ft. (Difference between static level and water level at end of test)

Pumping Test: Hours tested _____ Rate _____ g.p.m. Drawdown _____ ft.

Signature Orvil D. Majors

Date 7-1-70

FOR WELL LOG SPACE USE REVERSE SIDE OF THIS SHEET

APPENDIX G

SENSITIVE ENVIRONMENT INFORMATION

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SULLIVAN QUADRANGLE
INDIANA—SULLIVAN CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey
Revised in cooperation with Indiana Department of Natural Resources

Control by USGS and NOS/NOAA

Topography by planetable surveys 1941. Revised from aerial photographs taken 1972. Field checked 1974

Polyconic projection. 10,000-foot grid ticks based on Indiana coordinate system, west zone
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 2 meters south and 2 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

Red tint indicates area in which only landmark buildings are shown

UTM GRID AND 1986 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND INDIANA DEPARTMENT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INDIANA
QUADRANGLE LOCATION

Revisions shown in purple and woodland compiled in cooperation with State of Indiana agencies from aerial photographs taken 1983 and other sources. This information not field checked
Map edited 1986

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route · U. S. Route · State Route

SULLIVAN, IND.
39087-A4-TF-024
1974
PHOTOREVISED 1986
DMA 3562 III SW—SERIES V851

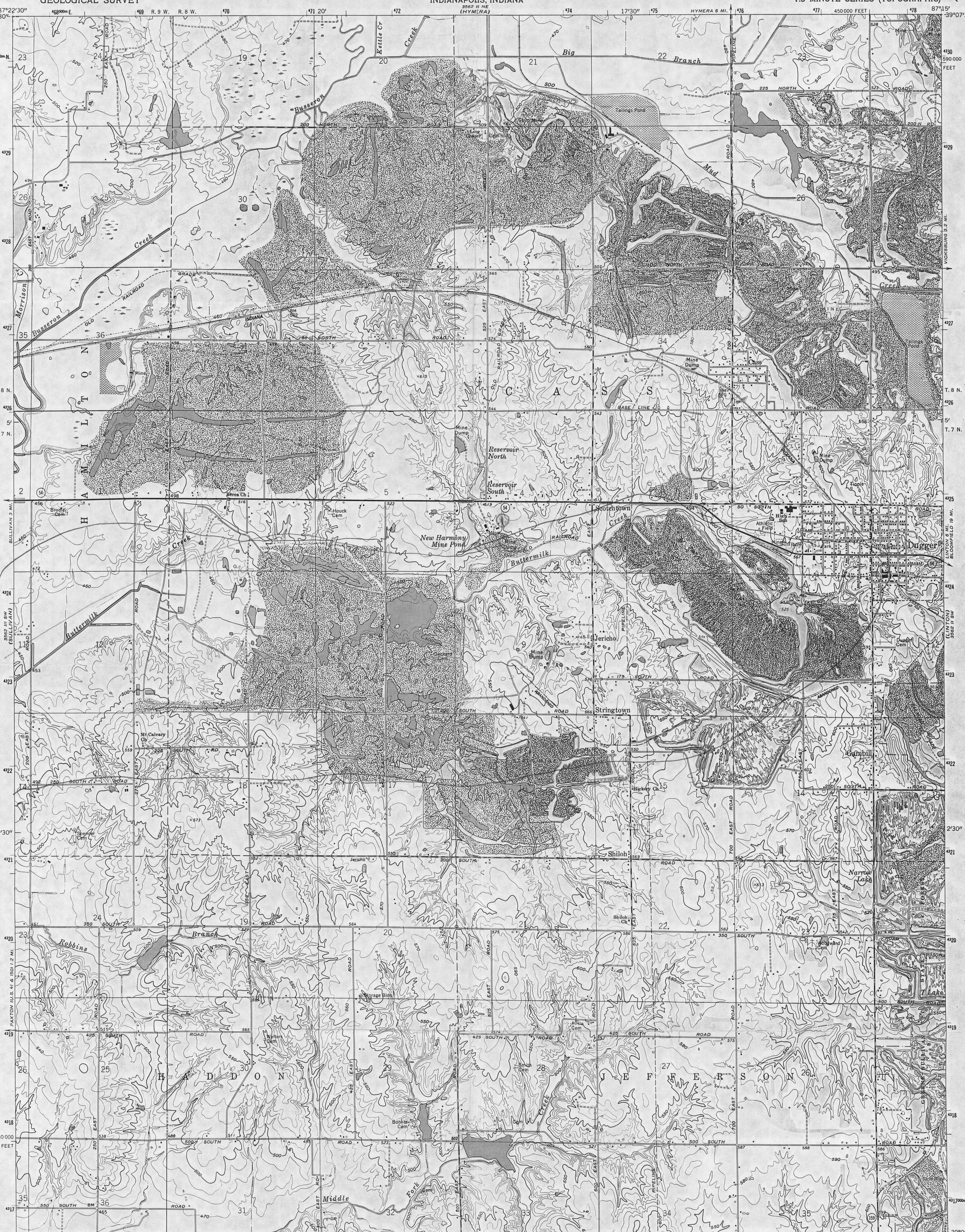
INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

558

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF INDIANA
INDIANA DEPARTMENT OF CONSERVATION
INDIANAPOLIS, INDIANA

DUGGER QUADRANGLE
INDIANA–SULLIVAN CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1987

Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA
Topography by planetable surveys 1940. Revised 1963
Polyconic projection. 10,000-foot grid ticks based on Indiana coordinate system, west zone
1000-meter Universal Transverse Mercator grid ticks, zone 16, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 2 meters south and 2 meters east as shown by dashed corner ticks
There may be private inholdings within the boundaries of the National or State reservations shown on this map
Revisions shown in purple and woodland compiled in cooperation with State of Indiana agencies from aerial photographs taken 1983 and other sources. This information not field checked
Map edited 1986

UTM GRID AND 1986 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

MN GN 1° 18 MILS 0°12′ 4 MILS

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY
DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
AND INDIANA DEPARTMENT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

INDIANA
QUADRANGLE LOCATION

ROAD CLASSIFICATION
Heavy-duty
Light-duty
Medium-duty
Unimproved dirt
State Route

DUGGER, IND.
39087-A3-TF-024

1963
PHOTOREVISED 1986
DMA 3562 III SE–SERIES V851

156

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
INDIANAPOLIS, INDIANA

CARLISLE QUADRANGLE
INDIANA
7.5 MINUTE SERIES (TOPOGRAPHIC)

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by planetable surveys 1941. Revised from aerial photographs taken 1972. Field checked 1974

Polyconic projection. 1927 North American datum
10,000-foot grid based on Indiana coordinate system, west zone
1000-metre Universal Transverse Mercator grid ticks, zone 16, shown in blue

Fine red dashed lines indicate selected fence and field lines where generally visible on aerial photographs. This information is unchecked

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

UTM GRID AND 1974 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ROAD CLASSIFICATION
Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

INDIANA
QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
AND INDIANA DEPARTMENT OF NATURAL RESOURCES, INDIANAPOLIS, INDIANA 46204
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

CARLISLE, IND.
N3852.5—W8722.5/7.5

1974

AMS 3561 IV NW—SERIES V851

87

Cloyce Hedge
Indiana Natural Heritage Program
Division of Natural Preserves
Indiana Department of Natural Resources

Re: Sensitive Environments;
Endangered Species, etc.

Dear Mr. Hedge:

Please send me information regarding endangered and/or threatened species, state land designated for wildlife or game management, and various other sensitive environments around the southwest sector of Dugger, Indiana. I am enclosing a copy of several topographic maps that depict the project area for which I am requesting the sensitive environment information. I have circled the project area. In addition, I am also enclosing a list of various types of sensitive environments for which I am requesting information on.

Thank You,

Mark Jaworski
Site Investigation Section
Office of Environmental Response

MLJ/taj

Enclosure
!3858s/taj

ENDANGERED, THREATENED, AND RARE SPECIES AND HIGH QUALITY NATURAL COMMUNITIES
AND NATURAL AREAS DOCUMENTED FROM AN AREA IN SULLIVAN COUNTY, INDIANA
(SEE ATTACHED MAPS)

Map Symbol	Species Name	Common Name	State Status	Fed Status	Location	Date
Carlisle Quadrangle						
#1	CHRYSOPSIS VILLOSA	HAIRY GOLDEN-ASTER	ST		8 MI S OF SULLIVAN, US 41	1930
Dugger Quadrangle						
#1	TAXIDEA TAXUS	BADGER	ST		3 MI W OF DUGGER	1982
#1	SISTRURUS CATENATUS CATENATUS	EASTERN MASSASAUGA	ST	C2	NEAR DUGGER	NO DATE
GREENE-SULLIVAN STATE FOREST						
Sullivan Quadrangle						
#1	STROPHOSTYLES LEIOSPERMA	SLICK SEED WILD-BEAN	ST		ABANDONED FIELD 1/4 MI N OF PAXTON	1933
BUSSERON BOTTOMS:						
	FOREST-FLOODPLAIN WET MESIC	WET MESIC FLOODPLAIN FOREST			HIGH QUALITY NATURAL AREA	1985
MINNEHAHA STATE FISH AND WILDLIFE AREA						

STATE STATUS: EX=EXTIRPATED, SE=ENDANGERED, ST=THREATENED, SR=RARE, SSC=SPECIAL CONCERN, WL=WATCH LIST

FEDERAL STATUS: LE=ENDANGERED, LT=THREATENED, C2=CATEGORY 2 (UNDER REVIEW, MAY POSSIBLY WARRANT LISTING)

Please note that the Indiana Natural Heritage Program relies on the observations of many individuals for our data. In most cases, the information is not the result of comprehensive field surveys conducted at particular sites. Therefore, our statement that there are no documented significant natural features at a site should not be interpreted to mean that the site does not support special plants or animals.

Due to the dynamic nature and sensitivity of the data, this information should not be used for any project other than that for which it was originally intended. It may be necessary for you to request updated material from us in order to base your planning decisions on the most current information.

Thank you for contacting the Indiana Natural Heritage Program. You may reach me at (317)232-4052 if you have any questions or need additional information.

Sincerely,

Cloyce L. Hedge
Coordinator
Indiana Natural Heritage Program

enclosures

CLH/mlm

CLOYCE - any changes to me. I'll then do final

look good.
CLH

February 1, 1991

Mark Jaworski
Site Investigation Section
Office of Solid & Hazardous Waste
Indiana Department of Environmental Management
Chesapeake Building
105 S. Meridian Street
P.O. Box 6015
Indianapolis, IN 46241

Dear Mark:

I am responding to your request for information on the endangered, threatened, or rare (ETR) species and high quality natural communities and natural areas documented from an area in Sullivan County, Indiana. The Indiana Natural Heritage Program's databank has been checked and enclosed you will find a list of ETR species and areas documented from three quadrangles.

The information I am providing does not preclude the requirement for further consultation with the U.S. Fish and Wildlife Service as required under Section 7 of the Endangered Species Act of 1973. You should contact the Service at their Bloomington, Indiana office.

U.S. Fish and Wildlife Service
718 North Walnut
Bloomington, Indiana 47401
(812)334-4261

At some point, you may need to contact the Department of Natural Resources' Environmental Review Coordinator so that other divisions within the department have the opportunity to review your proposal. Please refer to the enclosed Environmental Review Guidelines. For more information, please contact:

Patrick R. Ralston, Director
Department of Natural Resources
attn: Steve Jose
Environmental Review Coordinator
605 State Office Building
Indianapolis, IN 46204
(317)232-4070

APPENDIX H

PREVIOUS SAMPLING ACTIVITIES

State Form 4336

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

INDIANAPOLIS

OFFICE MEMORANDUM

DATE: May 15, 1991

TO: Marlene Mathas
State Cleanup 1

THRU: Manuela Johnson MJ 6-3
Rod Thompson ~~RT~~ 6/5/91

FROM: Jawad Syed JS 6-3-91
Chemistry Section

SUBJECT: Review of Lab Results for Dugger Electric
Dugger, IN

Sample Numbers: RK4697-RK4705
Date Collected: March 22, 1991
Analyzed by: EMS Heritage Labs

I have reviewed the attached laboratory results and have determined that they are acceptable for use. These results have been evaluated for the quality criteria contained in the Indiana Laboratory Broad Agency Announcement (9/1/90). Any exceptions to the acceptance of this data will be identified in this memorandum and should remain attached to the original results.

Field duplicate samples are used to establish the representativeness of the sampling (i.e., sampling error and/or sample homogeneity). The field duplicates compare well.

Soil and water samples collected from Dugger Electric site were submitted for polychlorinated biphenyls (PCBs) analysis. The tabulated results of analyses are on the attached page.

JS/mg

Dugger Electric, Dugger, Indiana RK4697-RK4705

Soils			Water	
Sample #	PCB 1260		Sample #	PCB 1260
RK 4697	Non-detect		RK 4697	Non-detect
RK 4698	Non-detect		RK 4698	Non-detect
RK 4699	0.036 ppm		RK 4699	0.00035 ppm
RK 4700	1.0 ppm		RK 4700	0.023 ppm
RK 4701	3.4 ppm		RK 4701	0.0020 ppm
RK 4702	1.0 ppm		Rk 4702	0.00064 ppm
RK 4703	Non-detect		RK 4703	0.00044 ppm
RK 4704	Non-detect		RK 4704	0.00043 ppm
			RK 4705	Non-detect

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

CONTRACT LABORATORY USE ONLY

☐ OWM ☐ OSHWM ☒ OER ☐ OAM

IDEM Control # (s): RK 4697 — RK 4705 — Collector: Dana Kerr

Lab Sample # (s): — EA Site ID #:

Section/Division: OER - SCSI — Expected Date: — Matrix: Water/Soil

TASK 1

	A ALL	B	C	D	E	F
Aluminum	■	■	■	■	■	■
Antimony	■	■	■	■	■	■
Arsenic	■	■	■	■	■	■
Beryllium	■	■	■	■	■	■
Cadmium	■	■	■	■	■	■
Calcium	■	■	■	■	■	■
Chromium	■	■	■	■	■	■
Chromium (VI)	■	■	■	■	■	■
Cobalt	■	■	■	■	■	■
Copper	■	■	■	■	■	■
Iron	■	■	■	■	■	■
Lead	■	■	■	■	■	■
Magnesium	■	■	■	■	■	■
Manganese	■	■	■	■	■	■
Mercury	■	■	■	■	■	■
Nickel	■	■	■	■	■	■
Potassium	■	■	■	■	■	■
Selenium	■	■	■	■	■	■
Silver	■	■	■	■	■	■
Sodium	■	■	■	■	■	■
Thallium	■	■	■	■	■	■
Tin	■	■	■	■	■	■
Titanium	■	■	■	■	■	■
Vanadium	■	■	■	■	■	■
Zinc	■	■	■	■	■	■

TASK 2

	A ALL	B	C	D
Alkalinity	■	■	■	■
Chloride	■	■	■	■
Fluoride	■	■	■	■
Hardness as CaCO3	■	■	■	■
Nitrogen, Ammonia (as N)	■	■	■	■
Nitrogen, Nitrate-Nitrite	■	■	■	■
Nitrogen, Nitrate	■	■	■	■
Nitrogen, Nitrite	■	■	■	■
Nitrogen, Total Kjeldahl (TKN)	■	■	■	■
pH (Lab)	■	■	■	■
Phenols, Total	■	■	■	■
Phosphorus	■	■	■	■
Specific Conductance	■	■	■	■
Sulfate	■	■	■	■
TDS	■	■	■	■
TSS	■	■	■	■
Total Organic Carbon (TOC)	■	■	■	■
Total Organic Halogen (TOX)	■	■	■	■
Total Solids	■	■	■	■
Total Volatile Solids	■	■	■	■

REPORTING TIME REQUIRED

	30	14	7	2
Level:	☒	☐	☐	☐

TASK 3

☐ pH (Lab)
☐ Solids, Filterable Residue (TDS)
☐ Solids, Total Residue (TS)
☐ Specific Conductance
☐ Total Organic Carbon (TOC)
☐ Total Organic Halogen (TOX)

TASK 4

☐ Cyanide
☐ Sulfide

TASK 5

A	B	C	D	E	F	G
☐	☐	☐	☐	☐	☐	☐

TASK 6

A	B	C
☐	☐	☐

TASK 7

A	B	C	D	E	F	G
☒	☐	☐	☐	☐	☐	☐

TASK 8

A ☐ Gasoline ☐ Diesel — B ☐ — C ☐ — D ☐

TASK 9

A ☐ Flash ☐ BTU — B ☐ Ignitability ☐ Corrosivity to Steel ☐ Corrosivity - pH ☐ Cyanide Reactive ☐ Cyanide Total ☐ Sulfide Reactive ☐ Sulfide Total — C ☐ D ☐ E ☐ F ☐

TASK 10

☐ Coliform, Fecal
☐ Coliforms, Total
☐ E Coli

SAS	SAS 1	SAS 2	SAS 3	SAS 4
☐	☐	☐	☐	☐

RK4697.5 - RK4705.5 (Soils)

EA4697.IV - RK4705.IV (Water)

APPROXIMATE CONCENTRATIONS (mg/kg or µg/L)

☐ 10 ppm ☐ 100 ppm ☒ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible]

Please send report to:

Name: Marlene Mathis

IDEM Program: OER

Street: Brubaker

City or Town: Ind. IN

COMMENTS:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

☐ OWM ☐ OSHWM ☒ OER ☐ OAM

CHAIN OF CUSTODY

I certify that the samples listed below were collected by me or in my presence Date 3 / 22 / 91

Signature Donna R Kerr Section

LAB NUMBER ASSIGNED	IDEM CONTROL NUMBER	CONSISTING OF THE INDICATED NUMBER OF BOTTLES: 2000 ml P N M	1000 ml P N M	1000 ml G N M	500 ml G W M	40 ml VIAL	125 ml					DATE COLLECTED AND TIME SEALED
	RK 4697			2	2							3/22/91 9:00 AM/PM
	RK 4698			2	2							3/22/91 9:15 AM/PM
	RK 4699			2	2							3/22/91 9:45 AM/PM
	RK 4700			2	2							3/22/91 10:05 AM/PM
	RK 4701			2	2							3/22/91 10:55 AM/PM
	RK 4702			2	2							3/22/91 11:10 AM/PM
	RK 4703			2	2							3/22/91 11:30 AM/PM
	RK 4704			2	2							3/22/91 11:45 AM/PM
	RK 4705			2	2							3/22/91 9:30 AM/PM
												/ / AM/PM
												/ / AM/PM
												/ / AM/PM

P Plastic G Glass NM Narrow Mouth WM Wide Mouth BO Bacti Only

CARRIERS

I certify that I received the above samples

SIGNATURE	DATE AND TIME	SEALS INTACT		COMMENTS
RELINQUISHED BY	3/22/91	Y	N	
RECEIVED BY	1:12 AM/PM			
RELINQUISHED BY	/	Y	N	
RECEIVED BY	AM/PM			
RELINQUISHED BY	/	Y	N	
RECEIVED BY	AM/PM			
RELINQUISHED BY	/	Y	N	
RECEIVED BY	AM/PM			
RELINQUISHED BY	/	Y	N	
RECEIVED BY	AM/PM			

LAB CUSTODIAN

I certify that I received the above samples. After recording these samples in my sample book, these same samples will be in the custody of competent laboratory personnel at all times or secured in a locked area.

Signature Date 3/22/91 Time 1:12 AM/PM

Lab Address

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
OFFICE OF ENVIRONMENTAL RESPONSE
SITE INFORMATION

SITE NAME: Dugger Electric

IDEM CONTROL #s: RK 4697 - RK-4705 TASKS REQUESTED: 7A

SITE LOCATION (CITY, COUNTY): Dugger, [illegible] Sullivan Co.

CONDITIONS: Sky overcast Ground [illegible] Wind 10-12 mph Temp 55° F

COLLECTORS: [illegible], [illegible]

Container	Total #
1 L Plastic	
1 L Glass	22 Amber
500 ml Glass	22 Amber
40 ml Vials	
Other:	

ACCEPTING LABORATORY: EMS

ADDRESS: [illegible] Indianapolis

PHONE:

CONTAINER SOURCE: IDEM

SAMPLE ICED? [x] Yes [ ] No

PRESERVATIVE USED? [ ] Yes [x] No

SAMPLE TYPES (CIRCLE): Mon. Well, Lagoon, Ash, Indus. Wast[e], Leachate, Soil, Waste Pile, Creek, **Di[...]**, Sludge, Solvent, Solid, Liquid, O[...], Sand, Drummed Waste, Truck, Res. Well, Other.

SAMPLE PLAN REVIEW: **grab** / composite statistical / random / **judgemental**

INFORMATION ON EQUIPMENT USED, FACILITY TYPE, PRODUCTS MADE, ETC.: Dugger Electric [illegible] capacitors & transformers

DECONTAMINATION PROCEDURES USED: Dedicated Equipment

EQUIPMENT IS (**DEDICATED** / DECONTAMINATED) SOURCE OF DECON. WATER: N/A

SOURCE OF BLANK REAGENT WATER: [illegible] Engineering & Science

MISCELLANEOUS: PHOTOS TAKEN? [ ] Yes [x] No

PROGRAM AREA: RCRA, CERCLA, SOLID WASTE, LUST / U[ST], State Cleanup, Site Management, **Emerg. Response**, Other:

PURPOSE: **Complaint**, Compliance, Enforcement, Other:

CONSTITUENTS EXPECTED: PCB's

RESULTS DUE BY: ___ / ___ / ___ HANDLING PRECAUTION? [x] Yes [ ] No

APPROXIMATE CONCENTRATIONS (WORST CASE): L. T. 10 ppm, 5%, 100ppm, **10%**, 1000ppm, G. T. 15[%]

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
OFFICE OF ENVIRONMENTAL RESPONSE
SITE MAP

SITE NAME: Dugger Electric

SAMPLE I.D.: ss/sw-1 → ss/sw-7 **IDEM CONTROL NO** RK4697 - RK4703

SAMPLE DATE: 3 / 22 / 91 . 9:00 (AM) PM

MAP:

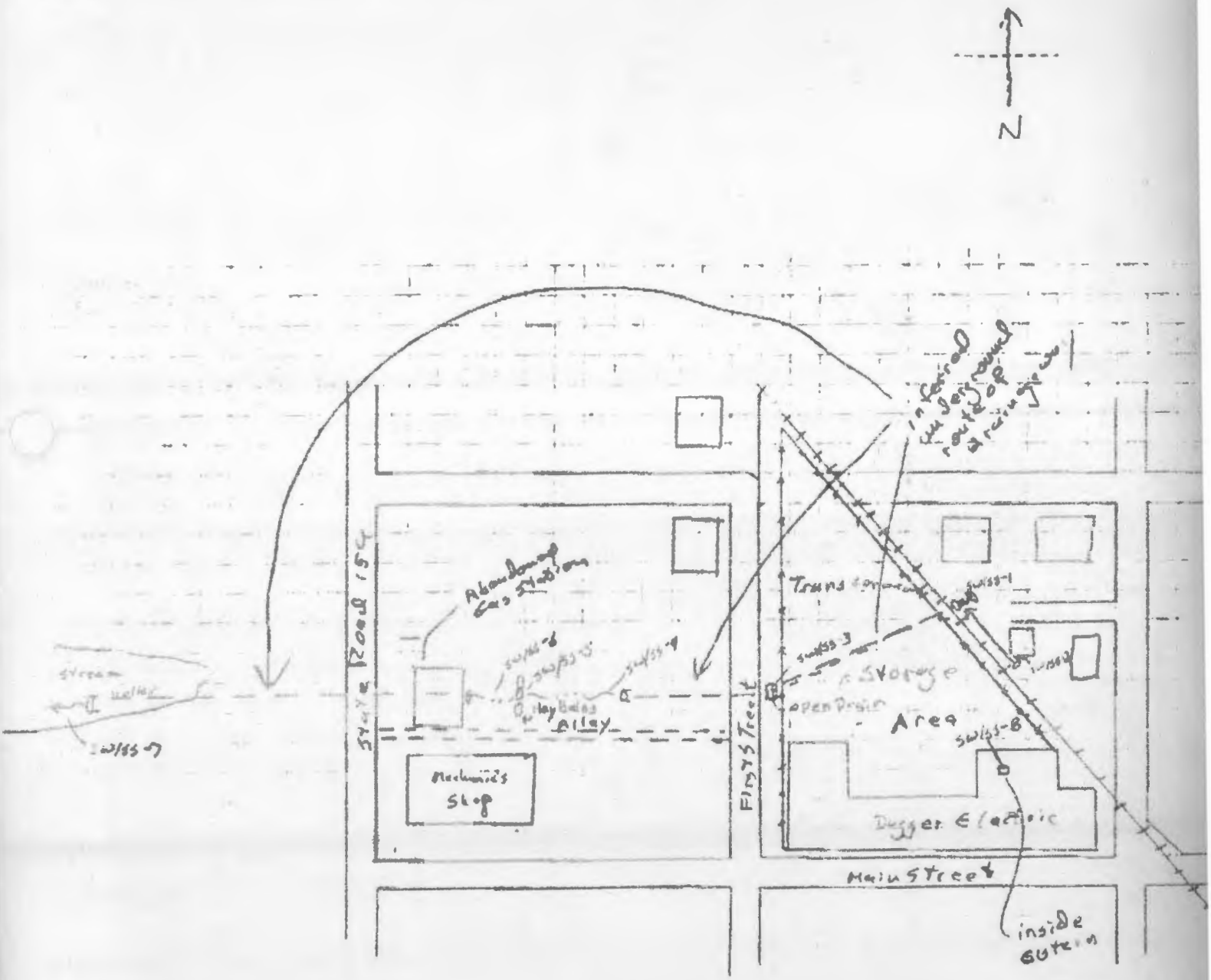


Figure 2 Location of site features and sampling points at Dugger Electric

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
OFFICE OF ENVIRONMENTAL RESPONSE
SAMPLE FIELD SHEET

SITE NAME: Pyger Electric

SAMPLE ID: SS/SW-1 **IDEM CONTROL #** RK 4697

Field Test Performed	Result
—	—
—	—

SAMPLE TYPES (CIRCLE ALL APPLICABLE):

Mon Well, Lagoon, Ash, Indus. Waste, Res Well, Leachate, Soil, Waste Pile, Creek, Oil, Sludge, Solid, (Ditch), Solvent, Sand, Liquid, Truck, Drum, Other ______, Blank (Equip./Trip), Duplicate (of ______), Background

SAMPLE DATE: 3 / 22 / 91 **TIME:** 9:00 (AM)/PM

Container Type	# of Containers	Preservatives		Lab / Lot Number
1 L Plastic		H_2SO_4	(50%)	
1 L Glass	2 Amber 9174613	HNO_3	(conc.)	
500 ml Glass	2 Amber 6080045	NaOH	(50%)	
40 ml Vials		Zn Acetate	(2N)	
		(Sample Iced)		

No preservatives used for non-aqueous samples

ADDITIONAL SAMPLE LOCATION INFORMATION: None

ADDITIONAL SAMPLE TYPE INFORMATION AND OBSERVATIONS: (depth taken, color, odor, size, clarity, density, suspended solids, colloidal, etc.) Oil sheen on water surface

FOR WELL SAMPLES: Well Purged (less / greater) than (1 2 4 6 12 24 48) hours prior to sampling

N/A Purged approximately (to dryness) / (1 2 3 4 5 8 10 G T 10 well volumes)

DEVIATIONS FROM SAMPLING PLAN: None

SAMPLING EQUIPMENT USED: (SS) Stainless steel bowl & spoon

SIGNATURE: [signature] **DATE** 3/22/91

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF SOLID AND HAZARDOUS WASTE MANAGEMENT
OFFICE OF ENVIRONMENTAL RESPONSE
SAMPLE FIELD SHEET

SITE NAME: Dreyer Electric

SAMPLE ID: SS/SD-2 **IDEM CONTROL #:** P15 4699

Field Test Performed	Result
—	—
—	—

SAMPLE TYPES (CIRCLE ALL APPLICABLE):

Mon. Well	Lagoon	Ash	Indus. Waste
Res. Well	Leachate	Soil	Waste Pile
Creek	Oil	Sludge	Solid
(Ditch)	Solvent	Sand	Liquid
Truck	Drum	Other:	
Blank (Equip./Trip)		Duplicate (of	
Background			

SAMPLE DATE: 3/22/91 **TIME:** 9:15 (AM) PM

Container Type	# of Containers	Preservatives		Lab / Lot Number
1 L Plastic		H_2SO_4	(50%)	
1 L Glass	2 Amber 91Y013	$1HNO_3$	(conc.)	
500 ml Glass	2 Amber 04800 43	NaOH	(50%)	
40 ml Vials		Zn-Acetate	(2N)	
		(Sample Iced)		

No preservatives used for non-aqueous samples

ADDITIONAL SAMPLE LOCATION INFORMATION: None

ADDITIONAL SAMPLE TYPE INFORMATION AND OBSERVATIONS: (depth taken, color, odor, size, clarity, density, suspended solids, colloidal, etc.) hydrocarbon like odor coming from drum pipe entrance Dreyer Electric

FOR WELL SAMPLES: Well Purged (less / greater) than (1 2 4 6 12 24 48) hours prior to sampling

N/A Purged approximately (to dryness) / (1 2 3 4 5 8 10 G.T 10 well volumes)

DEVIATIONS FROM SAMPLING PLAN: None

SAMPLING EQUIPMENT USED: SS Hand Spoon

SIGNATURE: Thomas R Horn **DATE:** 3/22/91

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 2901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	22-MAR-91	A226264
	Complete 15-APR-91	PO Number 90607684-54D
	Printed 16-APR-91	Sampled 22-MAR-91 09:00

Report To

INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
MONIQUE HINTERBERGER
P.O. BOX 6015
INDIANAPOLIS, IN 46206-6015

Bill To

INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
CARLA HATTON
P.O. BOX 6015
105 SOUTH MERIDIAN STREET
INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM GENERAL
IDEM CONTROL NO.: RK4697 W

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Analyst: J. ROBBINS Analysis Date: 25-MAR-91 Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	880		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: A. HOAGLAND Analysis Date: 01-APR-91 Instrument: GC/ECD Test: G301.2.0
Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: E.K. Buck

EMS HERITAGE LABORATORIES, INC. Lab Sample ID: A226264

LIST OF COMPLETED TASKS

GC IDEMR GC IDEM RCRA Completed:15-APR-91

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST INDIANAPOLIS, IN 46231 (317)243-8305	22-MAR-91	A226205
	Complete 15-APR-91	PO Number 90607684-54D
	Printed 16 APR 91	Sampled 22 MAR 91 09:15

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. MONIQUE HINTERBERGER P.O. BOX 6015 INDIANAPOLIS, IN 46206-6015	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT. CARLA HATTON P.O. BOX 6015 105 SOUTH MERIDIAN STREET INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM GENERAL
IDEM CONTROL NO.: RK4698 W

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Analyst: T. DORBINS Analysis Date: 25-MAR-91 Test: P259.3, 0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	870		mL
FINAL VOLUME	5		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: A. HOAGLAND Analysis Date: 01-APR-91 Instrument: GC/ECD Test: 0303.2, 0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.0001	mg/L
PCB AROCHLOR 1221	BDL	0.0005	mg/L
PCB AROCHLOR 1232	BDL	0.0001	mg/L
PCB AROCHLOR 1242	BDL	0.0001	mg/L
PCB AROCHLOR 1248	BDL	0.0001	mg/L
PCB AROCHLOR 1254	BDL	0.0001	mg/L
PCB AROCHLOR 1260	BDL	0.0001	mg/L

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: Ka Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8305	22-MAR-91	A220273
	Complete 15-APR-91	PO Number 90607684-540
	Printed 16-APR-91	Sampled 22-MAR-91 09:00

Report To

INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
MONIQUE HINTERBERGER
P.O. BOX 6015
INDIANAPOLIS, IN 46206-6015

Bill To

INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
CARLA HATTON
P.O. BOX 6015
105 SOUTH MERIDIAN STREET
INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM GENERAL
IDEM CONTROL NO.: RK4697-S

PCB SONICATION EXTRACTION SW846-3550

Analyst: M. KEEZER Analysis Date: 25-MAR-91 Test: PSX 3.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	16.94		Grams
FINAL VOLUME	50		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: B. WERNZ Analysis Date: 01-APR-91 Instrument: GC/ECD Test: Q301.2.0
Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.20	mg/kg
PCB AROCHLOR 1221	BDL	1.00	mg/kg
PCB AROCHLOR 1232	BDL	0.20	mg/kg
PCB AROCHLOR 1242	BDL	0.20	mg/kg
PCB AROCHLOR 1248	BDL	0.20	mg/kg
PCB AROCHLOR 1254	BDL	0.20	mg/kg
PCB AROCHLOR 1260	BDL	0.20	mg/kg
PCB AROCHLOR 1262	BDL	0.20	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: GA Busch

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
EMS HERITAGE LABORATORIES, INC.	22-MAR-91	A226274
7901 W. MORRIS ST.	Complete	PO Number
INDIANAPOLIS, IN 46231	15-APR-91	90607684-540
(317)243-8305	Printed	Sampled
	16-APR-91	22-MAR-91 09:15

Report To	Bill To
INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.	INDIANA DEPARTMENT OF ENVIRONMENTAL MGT.
MONIQUE HINTERBERGER	CARLA HATTON
P.O. BOX 6015	P.O. BOX 6015
INDIANAPOLIS, IN 46206-6015	105 SOUTH MERIDIAN STREET
	INDIANAPOLIS, IN 46206-6015

Sample Description

DESCRIPTION: IDEM GENERAL
IDEM CONTROL NO.: RK4698-5

PCB SONICATION EXTRACTION SW846-3550

Analyst: M. [illegible] Analysis Date: 25-MAR-91 Test: [illegible]

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	15.16		Grams
FINAL VOLUME	50		mL

POLYCHLORINATED BIPHENYLS (PCBS) SW846-8080

Analyst: [illegible] Analysis Date: [illegible] Instrument: [illegible] Test: [illegible]

Prep: PCB SONICATION EXTRACTION SW846-3550

Parameter	Result	Det. Limit	Units
PCB AROCHLOR 1016	BDL	0.20	mg/kg
PCB AROCHLOR 1221	BDL	1.00	mg/kg
PCB AROCHLOR 1232	BDL	0.20	mg/kg
PCB AROCHLOR 1242	BDL	0.20	mg/kg
PCB AROCHLOR 1248	BDL	0.20	mg/kg
PCB AROCHLOR 1254	BDL	0.20	mg/kg
PCB AROCHLOR 1260	BDL	0.20	mg/kg
PCB AROCHLOR 1262	BDL	0.20	mg/kg

Sample Comments

BDL Below Detection Limit

Quality Assurance Officer: *[signature]*